

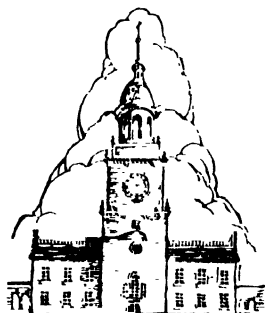


ON THE BORDERLAND OF THE PAINTED DESERT.

THE UNVANISHING NAVAJOS

By
BELLE SHAFER SULLIVAN

*Illustrated With Photographs Taken
by the Author*



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To
MY CANYON FRIENDS

FOREWORD

This book is not meant to be a scientific monograph, nor is it meant primarily to add to the sum of human knowledge. But if it helps to arouse an interest in the Navajos—a people living within our own borders but who are strange to many of us—as well as contributes to an understanding as to how various geographical factors have influenced this people's mode of living, the book will have served its purpose.

Many persons have helped to make the work herein possible: nearly every page records an obligation. But especially am I indebted to members of the United States Indian Service, to traders and missionaries of the Navajo country, and to those members of the Navajo tribe who themselves made me welcome in their homes, around their campfires and at their "sings."

The Navajos are well worth-while becoming acquainted with, whether from the viewpoint of the ethnologist, the economist, the historian, or from just plain human interest.

FOREWORD

And few places surpass in scenic grandeur those vistas greeting the eye, where sweep in majesty the far-reaching distances of their desolate but fascinating domain. You will find these stalwart and justly proud descendants of the First Americans a gentle folk, asking only that in their country you accord to them and their customs the same measure of courtesy and consideration you would expect of them if they came to visit you.

A sojourn in their vast colorful land so varied in form—to breathe its high sunny air, to refresh oneself at its frugal, sequestered springs, or to seek the cool shadows of its overhanging rocks, and to understand the life that is imposed upon those who dwell within its boundaries—is truly a travel romance, an unforgettable adventure.

THE AUTHOR

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INTRODUCTION

More than a mile above the sea level, on a vast plateau of the American Southwest, live the Navajos—numbering about 45,000—now more numerous than any other Indian tribe in the United States. They have a lien on remote domain, equaling in area the State of West Virginia, a part of which is nearly two hundred miles from the railroad. While the diet and clothing of these Indians have been modified by the advent of traders' stores, they are still largely a roving, pastoral people, living in remarkably close adjustment to their natural environment, though now that their land has become deteriorated through overgrazing, they are compelled to engage in a war against soil wastage.

The Navajo nation is one of the most important tribes of the widespread Athabascan linguistic stock found in scattered tribal communities from Alaska to Mexico. A mixed origin is indicated in the appearance of this tribe, as its physical types range in size from tall, sinewy men of six feet or more to some

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who are quite diminutive in stature. Also, they vary in feature, from the strong face with aquiline nose and prominent chin, common with the Dakotah and other northern tribes, to the subdued profile of the Pueblo.

As early as the sixteenth century, the precocious Navajos were raiders of the sedentary Pueblo Indians, and the coming of the Spaniards to the Southwest provided the Navajos with another opportunity for pillage. And through generation after generation, while the Navajo women were busy at home, wielding spindle and batten to the ever-waxing glory of their handicraft, the braves, intent on a reputation in their own right, were swooping down on the small villages and isolated farmsteads of the Spanish-Mexican colonists and on the communal lands of the Pueblos, tribes of peaceful Indian farmers—no match for this horde of marauders! Elusive and swift, these depredators would return in the dark with their plunder—sheep, horses, goats, corn, and even women and children—leaving behind them desolation and fear, and a casual blanket or two.

Even after the conquest of New Mexico by United States forces in 1848, followed by the

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establishment of military posts throughout the Southwest, this ever alert tribe of Indians, though having become wards of the United States as an outcome of the Mexican War, continued their raids at intervals. Expeditions led against them proved of no avail in keeping the plundering in check, until 1863, when many troops of hard-riding soldiers under the leadership of vigorous Kit Carson began combing the haunts and hiding places of these raiders. By the close of 1864, with most of their flocks and herds either taken for military use or slain, this on-going tribe that had never before really met a master was finally subdued, though it is well known that all the Navajos were not taken captive during Kit Carson's invasion.

Many of these Indians, herded from protective canyons and desert retreats, as well as others, destitute and half-starved who had voluntarily surrendered, were transferred to a military reservation in eastern New Mexico—Bosque Redondo. There, more than eight thousand transplanted members of the tribe strove to become peaceful tillers of the soil, sharing the bottomlands of a broad bend in the Pecos River with some four hundred

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of their linguistic cousins, the Mescalero Apaches.

But the undertaking at Bosque Redondo proved ill-adapted to the life of the roving Navajos. So in 1868, after the death of about a thousand of them and the escape of others, the Government, now realizing the pastoral tendency of its wards sent the remainder, consisting of men, women and children, numbering in all more than seven thousand, back to their old country. An appropriation of \$422,000 had already been made in that year to give this tribe of Indians a new start.

A reservation was established around Fort Defiance for them in 1870. And since then, the boundaries of their domain have been extended at various times until now the Navajo country—an area stretching from the Grand Canyon in Arizona eastward to the 108th meridian in New Mexico, and from the Little Colorado River northward to the San Juan River in southeastern Utah—includes about 25,000 square miles.

Although nominally the Navajos are confined to their reservation, numerous families of this ever-increasing tribe live scattered far beyond its boundary, pasturing their flocks

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and herds upon public domain or other unfenced lands privately owned. Further extension of their reservation into New Mexico has already been recommended by the Federal Government, but this proposed addition, comprising about 3,000 square miles, still awaits ratification by the New Mexico State legislature.

CHAPTER I

A GLIMPSE OF THE NATURAL SETTING

Rarely is the interplay between natural environment and man more strikingly manifested than in the vast realm of the Navajo Reservation. Here such a variety of natural features, manifold and confused, is displayed that only in the broadest sense are the various parts of the area alike. Within its boundaries are many geographic sub-provinces, as expressed by the topography, vegetation and other physical aspects which affect the land's usefulness for human occupation and influence the mode of life of the natives.

The Navajo country is a region of flat-lying or slightly tilted strata of sandstone and shale, lying at a general elevation of about 6,000 feet: above, rise buttes, mesas and mountains; below, drop tortuously winding canyons where meander feeble streams which often are swallowed up by sands, or dwindle to a trickle except during the rainy season when, sometimes, torrents rush like escaping floods.

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Gliding along the northern boundary of this country is the master stream of the region, the San Juan River, which maintains a perennial flow, permitting irrigation to be practiced within its vicinity to a comparatively great extent. Farming, however, forms but a meager part of the Navajo's subsistence, his livelihood being gained primarily from his flocks.

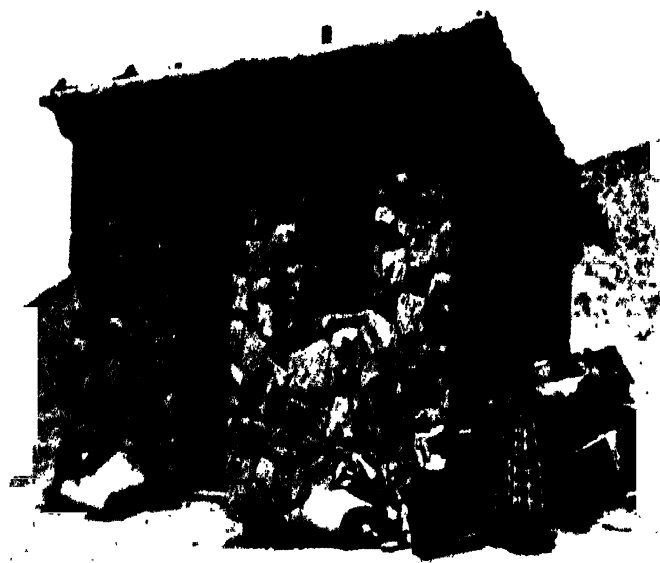
Aside from the Chuska Mountains, a lofty range extending north and south for a distance of almost fifty miles near the Arizona-New Mexico State line, and the high plateau to the east of it, the relief of the reservation in general is characterized by sharply-outlined mesas of varying area, proportion and altitude, and with broad and narrow intervening valleys. The range in elevation of the country above sea level—with the flora and fauna distributed in more or less well defined altitudinal bands—varies from approximately 5,000 feet on the rim of the Colorado River to about 9,000 feet on the Chuska Mountains.

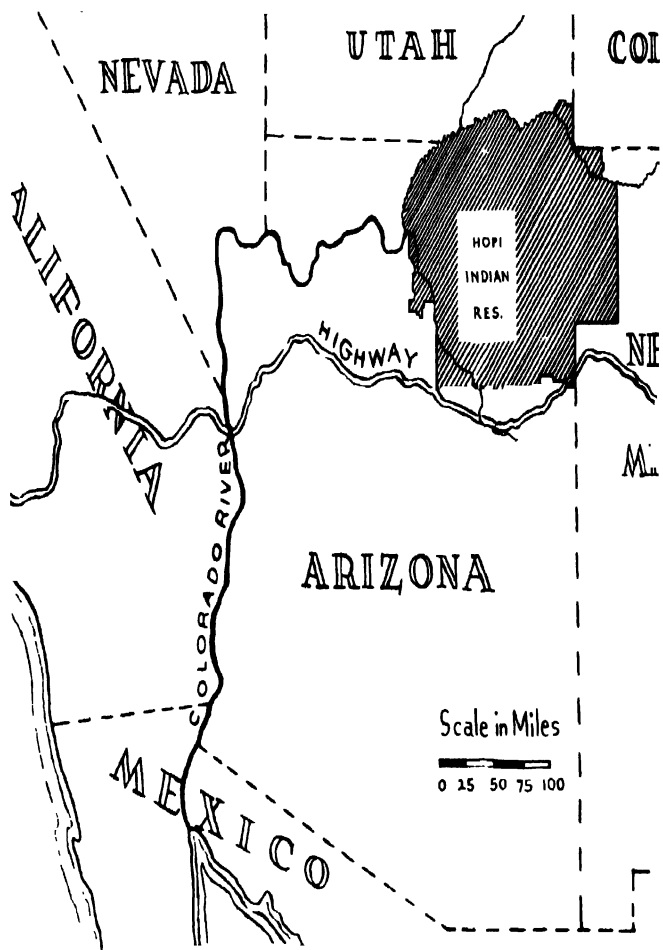
Igneous rocks occur locally and maintain a commanding position by reason of greater resistance to disintegration by weathering. These great wind-swept pedestals have long



N EXPLORING GOAT REACHES ITS BROWSING LIMIT FOR
LEAFY TWIGS OF A CREOSOTE BUSH.

A NAVAJO WOMAN WASHING CLOTHES OUTSIDE HER MODERN HOUSE OF
STONE AT CHIN LEE.





MAP SHOWING LOCATION OF THE NAVAJO AND HOPI RESERVATIONS, THE SHADED AREA INDICATING NAVAJO RESERVATION. THE HOPI RESERVATION MAINTAINS NAVAJOS AS WELL AS HOPIS.



SHEEP GRAZING ON SAGEBRUSH AT SHIPROCK ALONG THE SAN JUAN RIVER.
A MODERN HIGHWAY IS AT THE RIGHT.

THE NATURAL SETTING

been the landmarks of Indian and prospector. Near the northeast entrance to the reservation stands Shiprock—one of the most impressive igneous masses to be found in the Southwest—thrusting its unyielding summit into the air to a height of 1,400 feet above its base. Mile after mile of gray sagebrush stretch toward this purpling butte which dominates the landscape, from afar appearing as a great two-masted schooner in full sail.

More than 80 per cent. of the Navajo country is naturally range land and range in forest. Probably 15 per cent. of the surface area is natural badlands of clay and shale which form stringers throughout most of the whole. . . . Farm land is confined to small, irrigable tracts and the Navajo dry-farm located on valley flood plains.*

Range use has become so intense that change and depletion have become almost general, for nearly everywhere on this vast plateau varying stages of devastation prevail: grass is disappearing from the valleys, slopes and mesa

* Report of the Conservation Advisory Committee for the Navajo Reservation: Office of Indian Affairs, Washington, D. C., 1933.

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tops; arroyos are rapidly gutting the best soil, and on some parts of this land even the rangy Navajo sheep go hungry.

A half century ago, when the number of Navajo sheep was small, these Indians had no overgrazing problem. Their country, though lacking in perennial water, was covered with a seasonal growth of nourishing and palatable grasses and shrubs. Then, rich stands of blue grama and Galleta grasses rippled in the summer breezes far up the hillsides, forming an understory in the woodland. And in the canyons and draws of the hills, tall sagebrush and mountain mahogany kept the browsing flocks satisfied when deep snow mantled the grassy valley floor. The ample supply of forage brought about a rapid increase in the number of sheep and goats which, in turn, provided the basis for an increase in the Navajo population. But by 1933, having already acquired so many sheep and goats, the Navajos seemed doomed to economic ruin. For with the steady increase in their flocks, in addition to the Navajo method of range management, nearly the entire reservation became badly overgrazed.

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Overgrazing occurs when livestock eat the range vegetation faster than it can grow. Weakened, the overgrazed plants decline in vigor and aggressiveness, cannot bear seed, and finally die, leaving the soil sparsely covered with thistle, snakeweed, and other rank growth, so unappetizing as to be browsed only under pressure of starvation.

The loss of vegetation covering, however, is only the beginning; for, once the soil is denuded, then the heavy summer showers, so characteristic of the Southwestern plateaus, form swiftly-rushing torrents that wash the fertile top soil away, forming gullies that cut into the valleys. These torrential showers are usually of brief duration and sometimes confined to not more than a few square miles. The extremely varied topography of the Navajo country sets up local atmospheric conditions that exercise all kinds of disturbing effects upon the weather: gusts of summer rain mingled with hailstones are not unusual; of rare occurrence is the gentle rainfall lasting twenty-four hours or more.

Although the annual precipitation over different sections of the reservation varies from perhaps 8 inches to 20 inches or more, most of

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this country receives less than 10 inches, and may well be called "a land of little rain." Here there is little humidity, too; heat, though distressing, is not enervating; cold does not carry the marrow-bite of damper regions. Fog is news!

The lowland soils, occupying valley floors and occurring as narrow strips of alluvium, consist largely of fine, sandy loam or loam and clay types. Being deep and absorptive, such soils are better supplied with moisture than the uplands and are generally productive. Formerly, these rich lowland soils—accumulated through centuries by slow in-wash from the uplands—were very stable because of the flat surface and the dense growths of tall grasses that stood through autumn, winter and spring, drying in the sunshine to heavy stands of buff-colored hay.

But with the acceleration of erosion on the uplands and the consequent increased run-off, together with disturbances in the lowlands by automobiles and wagon tracks, as well as by stock-treadings, intensive grazing and tillage, the stability of these alluvial soils is broken down in many places where the ever-deepen-

THE NATURAL SETTING

ing arroyos drain the ground-water, causing rich stands of forage to vanish.

When an arroyo has once cut into the sandy sub-strata of these water-transported soils, caving from the side sets in, causing rapid widening and branching. Restoration of such areas is possible and, in many places, is being effected by the construction of check dams to catch and hold the silt pouring in from the adjacent watersheds, and reestablishing vegetation over the critical regions.

Southwest winds blow across the reservation throughout the year; days on which the air is quiet are rare. The effect of these continual currents, in a region of little rainfall and of scant vegetation, may be seen on all sides. Strong winds whip the top soil up and carry it out over adjacent lands, churning it into drifting hillocks, sometimes burying vegetation waist-deep. The areas from which the soil is scooped by the wind are pitted with holes or bared to the unproductive subsoil.

Since such disturbances are characteristic of plowed fields, to avoid general digging the Indians sometimes plant seed by the use of a pointed stick. And to lead water to the little patches of corn, beans, squash and melons

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supplementing their range operations, individuals may be seen patiently building and rebuilding small dams and conduits of sand and sagebrush.

Whirling columns of dust reach high in the air. But blown sand, being heavy, usually sweeps along in a thin, abrading sheet near the ground; from this elemental fury both man and beast endeavor to find shelter—perhaps in a friendly arroyo—the few strayed cattle standing with their tails to the wind, their heads hung between their forefeet. But with sundown the sands lie still, awaiting tomorrow's wind.

Most severe are the sandstorms on the Kaibito Plateau and along the Tusayan Washes, as well as in the Painted Desert—a belt of intricately carved and brilliantly colored rocks interspaced with areas of many-hued marls and clays—traversing the western Navajo country. Agriculturally, the real badlands of the Painted Desert type are almost entirely unproductive, and not even the rangy Navajo sheep can make a living there.

But away above the sandstorms, topping the mountains and the higher mesas, are open woods of yellow pine, interrupted at the

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loftiest elevations by Douglas fir and Engelmann spruce towering in majesty from the lesser forest. In these cool, somber solitudes roam the wolf, the fox and the bear, leaving marks of their treadings on the winter snow-fields. A chipmunk shows itself momentarily, a shy bird twitters and, perchance, a porcupine may raise its quills at the cry of a mountain lion, king of the predators, which, though seldom seen, also prefers the forested uplands to open desert ranges.

On the higher elevations precipitation is much heavier than in the lowlands; but because of the short, cool growing season, the highland regions are little disturbed by cultivation, and little is to be feared from encroachment by the sawmill, for in this arid country the trees are too valuable to the watersheds.

Some of the mature groves, however, on the Chuska Mountains and over the Defiance Plateau have but a scant reproduction to replace the old stand. The browsed line on junipers, where the last of these dwarf conifers reach up to meet the first tall pines, indicates that the absence of tender young pine seedlings may be largely due to overgrazing and to the resultant change in soil.

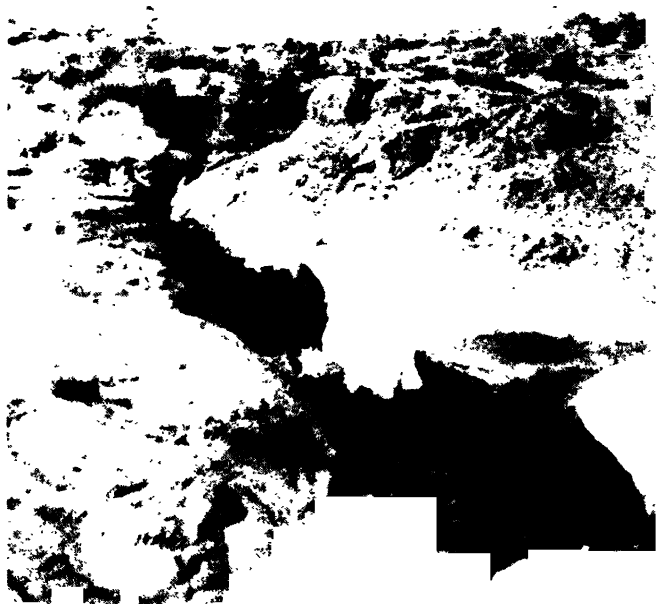
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And on these highland crests lightning, too, plays havoc, especially the lightning that comes with little or no rain. As it slashes among the pines, a big conifer blazes forth, crackles and roars, sending up its baleful beacon of smoke, a tell-tale to the guardian of the evergreen domain, the ranger.

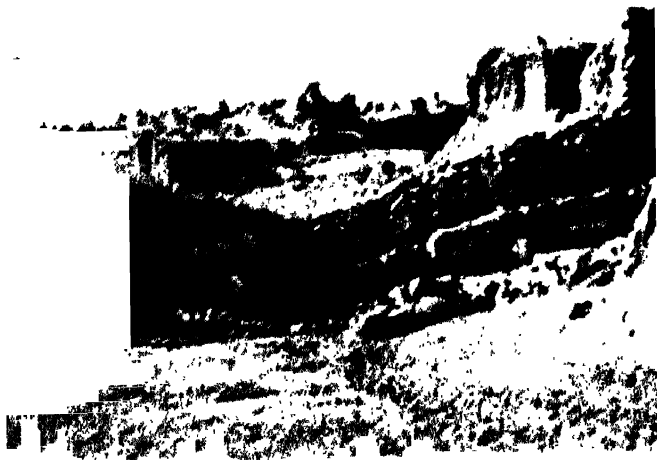
Lightning ranks first as a cause of forest fires on these timbered tops. Here, trees partly burned or dead are commonly seen standing stark and spectral until they are shattered by the violence of storms. Sometimes the lightning runs along the ground, burning myriads of dried cones and strewn needles, laying waste to forage, and killing the tender seedlings, the big trees of the future, thus preparing the way for erosion.

But the many-sided destruction due to such erosion has already attracted the attention of specialists in the Federal Government service, and a method of erosion control is now well under way, checking the wasteful flow of water by effecting its distribution over the land instead of letting it rush through ever-deepening flood-made gullies. And to the technician it was clear that the place to begin the soil conservation measures was not on the

A DEEPENING AND WIDENING ARROYO.



OVERGRAZING FOLLOWED BY EXCESSIVE EROSION HAS TRANSFORMED PLEASANT GRASSLANDS INTO DETERIORATED AREAS. BUT, AS SHOWN HERE, WASTAGE OF SOIL IS NOW BEING REDUCED BY CONSTRUCTION OF INEXPENSIVE CHECK DAMS MADE OF STONES HELD IN PLACE BY WIRE.



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low, bare flats where valley floors broadened out into the plains, but far up in the woodlands, at heights where the flood water gained its powerful momentum. Watersheds must be protected.

CHAPTER II

HUMAN OCCUPANCY OF THE RESERVATION

The Navajo country is more accessible from the south by any of the regions adjacent to the Santa Fe Railway towns or from the northeast through the San Juan Valley leading to Shiprock. Entrance to the reservation is common, however, by way of Lee's Ferry Bridge on the northwest as well as by Bluff and Mexican Hat on the north. From most of these places extend modern highways, following the course of the main Indian trails of the past but, today, knowing the roar of the high-powered automobiles laden with visitors and the sound of ponderous trucks carrying cargoes of wool or oil-well supplies to their destinations. Lesser roads and trails lead from the main highways, but the greater part of the Navajo area is still a horseback country where a pack train is the type of conveyance which affords the greatest freedom of movement in transportation.

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A traveler choosing to leave the highway should be prepared to endure hardship and the uncertainties of travel in a region where aridity is the dominant climatic factor. Over most of this country even plants cannot thrive without special adaptation, and their scraggy, thorny appearance as well as the presence of predacious types of birds and animals—symbols of the waste lands—signify that here the contest for life is keen and the penalty for inefficiency more drastic than elsewhere.

With its intricate network of canyons, resembling a maze, the vast wilderness in the northwestern part of the reservation is the more difficult of access, particularly the Rainbow Bridge Plateau—a land little known. Roads are few in the northwest region; trails are poorly defined, and in the rougher areas no trace of travel can be discerned. Continued exploration and scientific study are required as regards new routes which must be found and made passable if penetration is to be made to the heads of the side canyons and to the tops of the intervening mesas.

Throughout the Navajo country are numerous springs, occurring in what appears to be a haphazard distribution. These outflows

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mark the escape of ground water from rain and melting snow that has entered the rock or soil at higher levels and made its way downward and outward. Most of the springs yield less than a gallon per minute, and many of them are periodic. More than three hundred of these meager supplies of water are indicated on a detailed map of the country, and a knowledge of their location and nature facilitates safe traveling in this region.

Many springs issue from crevices in mesa sides and canyon walls; others bubble up through floors of sand-washes, while there are those that hide themselves in intricate nooks, some of which are almost inaccessible. Occasionally there may be one with a waterfall aspect but tumbling down from walls so high only spray reaches the ground yet lending a tang to the air—the flocks sniff joyously!

Springs charged with salts are common; some, in certain sections, being so highly charged as to make the water unfit to drink. But the Navajo knows the waterholes of his domain—how palatable they are, how large and whether or not they are permanent. He knows the trails and distances, too, and how to move through the uplands by the least toil-



TUBA, A SETTLEMENT IN THE VICINITY OF A GROUP OF SPRINGS. RARELY IS THE CONTRAST BETWEEN DESERT AND OASIS BETTER DISPLAYED THAN IN THIS INVITING SPOT.

SHONTO SPRINGS: AN OASIS IN A FAR-FLUNG DESERT AREA.



THE RESERVATION

some routes, for from early times he has been aware of the need for unfailing supplies of water and of their inextricable association with trails. Hence many of the well-beaten Indian paths owe their origin to the location of life-saving water holes rather than to the topography or length of route.

And wherever water goes—is life. As man gains control of water he dominates and alters his environment. Thus the power-driven well, introduced on the reservation more than a quarter-century ago, has here further determined the extent of human enterprise. Wells, like constant springs, make permanence of habitation possible. And wells are associated with trails, too. For without wells or springs at intervals, long trails were almost impossible; and without trails, people would have been moored rather closely to one locale. For communication had relied upon the availability of water and this dependence was severed when water could be induced to rise where needed in the form of wells, and connected by steadfast trails.

The main valleys extend for great distances and Navajo culture tends to localize in these lowlands. The great Chin Lee Valley, a tract

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in some places twenty miles wide, traverses the heart of the Navajo country from its southern limit northward to the San Juan River. For miles and miles within this region grow the cacti and the yucca, storing up in little reservoirs within themselves an abundance of moisture for any drought, and later compensating the valley with their bizarre and glorious blooms, while here and there smile tilled fields, small areas of dry-farming and irrigated land. This picturesque valley, where Nature has been less frugal with water, is one of the more populous parts of the whole Navajo region.

Formerly the Navajos were under six separate jurisdictions, but recently all Navajo jurisdictions were consolidated under one central agency, situated at Window Rock, Arizona, twenty-six miles northwest of Gallup, New Mexico. Encompassed by the Navajo country is the Hopi Reservation, occupied by more than 3,000 Navajos as well as some 3,000 Hopi Indians.

The Hopis' compact villages of terraced houses, built of stone set in mortar, are perched on the crests of high, steep mesas; below, among the sand billows, are their little farm patches—corn, melons and peaches, raised

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along the washes and on artificially terraced slopes. Trading posts, schools and missions bring the whites into contact with this sedentary tribe, but ever since the fruitless labors of the early Spanish padres, the Hopis have been resistant to attempts at white civilization.

The white inhabitants of the Navajo country, not more than 2,000 in number, consist of Government officials, missionaries and traders. Near the permanent supplies of water, in widely separated settlements, are located the Government sub-agencies, schools and hospitals and also the mission centers and trading posts. Nearly all the larger centers of population are now accessible by reasonably good roads, over which ply mail trucks at regular intervals except during periods when deep snow blocks the way.

On the long highways which must be traversed in crossing the Indian country, in some localities it is found that buildings are equipped with rain troughs, and cisterns are constructed for travelers and for teams. Especially is this true where the expense for driving wells is prohibitive or where the present water supply, though sufficient in quantity, is unsuitable for man's use.

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Perhaps the greatest danger encountered on the highway is the arroyo. But on the best-kept routes either a bridge or a cement dip is made where an arroyo crosses the road. Some of these dips are equipped with markers. Yet, when the clay-colored floods carrying various kinds of debris go swirling, an inexperienced or too adventurous driver entering a two-foot stage may pay with his life by daring the current's power as it goes tearing along—churning, foaming, leaping—scraping the bottom of the arroyo down to bedrock and smoothing it like a polished table.

There is no doubt that the Navajos have steadily increased in number since 1868 when they returned to their old country after four years of confinement at Bosque Redondo. Most authorities agree that when the Government called the tribe in 1869 to receive a gift of sheep and goats the Indians were counted as they filed into a large corral; the result showed that, after making due allowance for absentees, there were somewhat fewer than 9,000. Various subsequent counts have been made but, until within the last decade, no reasonably complete and systematic enumeration of the Navajos has been accomplished. Their



AN EARTH-COVERED HOGAN WITH ITS ADJOINING SUMMER SHELTER.

AT CAMERON: NAVAJO WOMAN WITH TWO CHILDREN BY HER SIDE AND AN
INFANT IN HER ARMS NEAR THEIR HOME, A HOGAN MADE OF LOGS LAID
HORIZONTALLY AND CHINKED WITH ADOBE.



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scattered distribution over a vast semi-arid area with its geographical obstacles to traverse—dangerous washes, rock wastes, rugged mountains, quicksands—as well as their mobility, makes an accurate count extremely difficult.

A recently devised plan of enumeration provides, among other measures, for the fingerprinting of every Navajo counted and, in addition, the furnishing of a consecutively numbered metal disk to each one as a means of permanent identification. Records show that 44,308 have been enumerated in accordance with this method.* It is believed, however, that the census takers have not, as yet, been able to get in touch with every Navajo—in all probability 45,000 is closer to the total number.

* Enumerated at Federal agencies Jan. 1, 1937.

CHAPTER III

SITES AND TYPES OF HABITATIONS

The Navajo in choosing a site for his dwelling reveals the human adaptation to local and seasonal conditions of environment. A particularly desirable place of abode, such as the immediate vicinity of a permanent spring, may be occupied by as many as eight or ten families, for in this arid land nowhere is life so abundant and so buoyant as at the water's edge.

But aside from such larger and more permanent aggregations of Indian population, it is rare that one finds more than three or four huts together, since the number of families is limited by the supply of water and the condition of the pasture. A family may have two or three places of abode, each of which is occupied in turn as the seasons change.

The Navajo practice in summer is to take their flocks up to the higher mesas or into the mountains, grazing them in the neighborhoods of springs, rainpools or perhaps in shadowy ravines where trickle fine tributaries which

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later go cascading into willow and aspen-bordered brooks.

In the autumn the shepherds with their sheep move down to the lower wooded mesas and the valleys where, during the winter, they both rely to a great extent upon the snows for their water supply. In this way, pasturage in the waterless lowlands can be utilized. But with the approach of summer they gradually return to the uplands which have been refreshed by the seasonal accumulation of snow.

In canyons where there are ever-present streams and patches of arable land, some Navajos reside permanently. Two of the more populated, Canyon de Chelly and its tributary, Canyon del Muerto, carry a large part of the run-off from the Chuska Mountains, thus insuring a permanent flow. These tremendous gorges, each extending for nearly twenty miles from east to west, are bounded for much of the distance by sheer sandstone walls almost 800 feet high, from which project enormous buttresses, pinnacles and towers. In these protective, intricate ravines, Navajos make their homes at the base of cliffs or among the cottonwoods, willows and tamarisks. Formerly they pastured their flocks wherever the width of

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the canyon floors would permit but, owing to soil conservation measures, no sheep bells tinkle here now, for the Navajos have promised to keep their flocks out of the canyons until the range has been restored.

An unexpected phase of the flora of Canyon de Chelly is its peach orchards, probably a remnant from seed of Spanish introduction centuries ago. Tucked away between high cliffs which reflect the warmth from the sun, these orchards flourish in sheltered nooks where enough earth has accumulated to form a soil sufficiently nourishing to support them. And tiny cornfields and melon patches thrive here, too, where the canyon widens out into sunlit coves. But in some places the cliffs are close together forming an alcove, grim and desolate, where sunshine seldom reaches the bottom.

Navajo wagons pass up and down the canyon. Pack-saddled burros laden with savory firewood trudge along, while wiry Navajo ponies scramble through the shifting quicksands or scamper over the firmer canyon floor. But in winter, when the stream of the canyon bottom is frozen over, progress is laboriously slow.

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And perched high up in shallow cavities of the canyon's red-hued sandstone walls are ancient dwelling places, kept from decay by the dry Arizona air. What a happy hunting ground—for the archaeologist!

But the Navajos hold no actual tradition about the people who inhabited the numerous cliff dwellings and other ruins scattered throughout their country, which tends to indicate that these ruins were already deserted when the Navajos arrived. However, believing the ruins the abode of gods, some of these cliff dwellings are mentioned specifically in Navajo myths.

Aside from canyon localities, sites chosen by the Navajo for his dwelling place may be at the edge of a piñon grove or a sheltered nook on a sun-flooded mesa side but, in any event, convenient to fuel and not too far from a spring or a seep of water. And here and there in the valleys where a patch of land can be irrigated, or where ground water is near enough to the surface, a Navajo is sure to settle down. Here he remains during the growing season, cultivating crops, while other members of the family live on an upland site, guarding the sheep, goats and ponies. In ad-

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dition, he may have an abode among the dwarf conifers in the foothills, where he spends the winter with his family.

Although, to the Navajo, land is owned only in the sense that it is used, the tribe is not strictly a nomadic one. While they regard the entire reservation as theirs, collectively, still to a great degree they have individual use of the land. Each family has a recognized scope in valley and on upland and usually clings to its accustomed area, residing permanently in one broad tract, but not in one spot. Rarely does anyone drive his flock on to an area which is being utilized to its full capacity by another. If a family is compelled to move livestock to fresh pasturage in a strange neighborhood, the movement is not attempted until satisfactory arrangements have been made with the families already living there.

With a background of sagebrush, greasewood and sand, the Navajo dwelling is inconspicuous in the landscape, and it is easy enough to pass close by one of these abodes without even noticing it. There are two distinct types of habitation: the bough arbor for summer and the earth-covered hut, called the hogan, for winter. The brush bower is for temporary

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occupancy, but the hogan is regarded as the more permanent home. Sometimes the bough shelter is directly in front of the hogan, forming an out-of-door sitting-room.

Many of the summer shelters are made of rudely piled branches and brushwood, mere windbreaks or shades from the fiercely burning sun. However, summer bowers of a more careful construction are common, as many as six forms being recognized, each of which is known by an appropriate name. One of the more frequent types is the "lean-to," a shelter formed by two fork-topped posts set ten or more feet apart and connected by a pole placed in the crotches; branches with foliage are leaned against this pole from the west, effecting a shady retreat facing the east. And invariably all the other types of summer bowers as well as the winter huts face the east—where their "gods assemble at dawn."

Most of the summer shelters are lightly constructed, barely comfortable when a blustery rain beats against them, but when supported by durable timbers it is not unusual for them to be occupied year after year, merely by the renewal of the leafy boughs.

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Winter abodes too display different styles of formation, but the most typical is the earth-covered hogan, the details of which are traditionally prescribed. Previous to the actual construction of such a hut a circular area, usually about 14 feet in diameter, is excavated to a depth of perhaps a foot or more in order to secure additional interior space and a level floor. Three short cedar or piñon trees are trimmed, leaving a wide fork at the smaller end. These ends are then interlocked to form an apex about 7 feet high, the extended props resting on the outside of the circular hollow. Other logs and poles are laid on top so as to form a conical house. Brush or cedar bark is crammed into the large cracks and, finally, earth is piled over the structure to a depth of several inches. Such a dwelling leaks only after a long, heavy rain.

Projecting from the building like a dormer window is the doorway, left open in mild weather as it does not face the prevailing westerly winds, but during cold spells kept closed, sometimes with a blanket or sheepskin, although it is far more customary nowadays to use a door made of wood. Between the doorway and the apex, a hole is left to admit



BENEATH THE BRANCHES OF A COTTONWOOD, THIS NAVAJO TOT LOOKS TIMOROUSLY AT THE PHOTOGRAPHER. HANGING ON THE LINE TO AIR ARE SHEEPSKINS AND A PENDLETON SHAWL.



NAVAJOS IN FRONT OF A HOUSE OF LOGS IN THE CHIN LEE VALLEY. A HIDE, OUTSTRETCHED AND SPIKED TO THE GROUND, IS DRYING IN THE SUN.

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air and light and through which smoke can escape.

In regions where plenty of small stones are found, these are used for the construction of dwellings. Particularly is this true along friendly watercourses where coverts are dug out in the sandy banks and low stone-walled huts are built. But in areas not too distant from timberland, the hogan is often built of logs laid horizontally in hexagonal form and chinked with adobe, each course being drawn in until a dome is formed. Quite probably the idea of horizontal timbers was adopted from the log cabin of the white man.

But go to one of these primitive huts, when the Navajos, placid but busy, are living their everyday life. A good time to go is in October. Then come brilliant days of banished clouds when the cottonwood and aspen turn golden, when the mornings sting with frost and over the hogan roof floats the incense of cedar firewood; when, spread on the ground near the hogan wall, ears of multi-colored corn are drying and the mottled squash are ripening in the harvest sunshine; when summery noonday chills to frosty midnight. Then, near the hogan door, as the colder season approaches,

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higher and higher is being piled conifer fire-wood from the foothills. And by night the light from the crackling fire in a pit in the center of the floor is often the sole illumination of this dwelling, for here the triumphs of science have not entered—gas and electricity have no place. But by day the dimness of the interior is in such sharp contrast to the harsh glare out of doors that a stranger would hesitate at the doorway before entering, so that his eyes might become accustomed to the subdued light.

And what a wide range of impressions the visitor receives while gazing over the sole room of this hut. Bridles and cook-pots are conspicuous as they hang from nails; clothing is stuffed away between the logs, while on two sides of the carefully swept adobe floor, smooth and hard from use, lie sheepskins, freshly shaken and fluffy, that serve for beds by night and seats by day . . . and Navajos with moccasined feet slip around with soft deft step.

Perhaps squatted before a low-burning charcoal fire is a man, softly chanting as he hammers silver coins into articles of personal adornment, while at another side of the room his wife, bending over a metate, is grind-

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ing corn; or she may be busy at a loom, from the posts of which hang long skeins of brightly colored yarns and on the floor in a box by her side are other yarns, arranged in strands, each color in readiness to be drawn forth by its mistress' dextrous fingers. Usually against the wall are several packing boxes: one invariably used as a cupboard, another quite likely to domicile the family cat, not always a happy-looking creature, for like as not it is unfamiliar with milk though goats may nibble at the hogan door and even stalk inside.

Unless the weather is severe, nearly all activities of Navajo life are carried on out of doors. Here the younger children romp around, scuffing the dust and playing with sticks and stones, perhaps interrupting their game to help an old hen defend her chicks from a dog or to chase away a crow pecking at the drying corn. The older boys and girls, if not in school, may be at their destined task—crossing the hills clumped with piñons and junipers—following the flocks.

The Navajos do not object to a white visitor who is vouched for by a trader, Government employee or some other person they approve. In their roadless wilderness a Navajo guide,

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even though he speak but little English, may prove an interesting companion. And in striking contrast to the stolid look behind which many Indians hide themselves in the presence of strangers, he may occasionally ripple with laughter at some pleasantry, his even white teeth flashing; or, at other times, feigning recognition of words as the newcomer attempts to pronounce them from a Navajo dictionary might be interpreted as a gesture of hospitality.

Fortunately efforts are being made to encourage the Navajo to introduce certain improvements into his hogan that may have a far-reaching effect upon his health, for the interior of these huts—not infrequently a horror to the hygienist—are not only deficient in sunshine but at times of a contrary wind may be clouded with smoke. Then, too, there are the dangers from sleeping on the dirt floor with insufficient bedding and covering, and from the unsanitary conditions as a result of the commonplaces of waste and water supply.

Of late, here and there in the less remote regions, are seen substantial rectangular-shaped houses, made of adobe, stone or logs and with windows, doors and chimneys, simi-

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lar to those generally constructed by the whites in the Navajo country. These dwellings are furnished with real beds, tables and chairs, also with stoves in which coal, mined on the reservation, is burned. Oil lamps usually provide the illumination, yet a few of the finest of these modern abodes have electric lights and are even equipped with plumbing. But when the distances are great and the roads rough, transportation of materials adds considerably to their cost. Hence it is only the comparatively well-to-do who can afford to build and furnish a "white man's house"—such an outlay of funds would bankrupt the average Navajo!

After death has occurred in a dwelling, it is either burned, or else abandoned and left undisturbed by the Indians until it crumbles into decay. Such a deserted abode is called a "tchindi-hohrahn," meaning a devil-house—a place the Navajo even avoids passing close by." Those who possess substantial stone or log houses sometimes build a temporary hogan for their sick or, to prevent death from occurring in their dwellings, they carry the dying outside, there allowing them to expire.

To a stranger traveling over the reservation the abandoned dwellings may seem alluring,

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especially at a camp-site where wood is scarce. But the use of these deserted huts may lead to trouble, for it is considered very bad manners to go into them or to tear them down for fuel.

Besides houses for dwellings, the Navajos build medicine lodges and sweat huts. The medicine lodge—a house in which ceremonies are held for curing the sick—is similar in construction to the hogan, though much larger, for it must be of sufficient size to accommodate a score or more of persons besides a floor space reserved for making an elaborate dry painting, often twelve feet in diameter, of different colored sands—every figure, every line, every dot, a symbol. In constructing these lodges, diameters as great as fifty feet are attained, though smaller ones are more usual. When built in the vicinity of tall trees, the lodges are conical in form, but if built in a region of low-sized trees, the roofs are flat.

The medicine man, proud and dignified, usually treats the sick with herbs, sweat baths and massages accompanied with ceremony varying in intensity and degree according to the nature of the illness and the financial standing of the patient. If a family has wealth

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one of the major chants may be given, in the case of a persistent ailment. Of all Navajo ceremonies, perhaps the most popular is the Night Chant, lasting nine days and nine nights, often attended by a thousand or more Indians from various parts of the reservation, some of them staying even the full time.

In addition to building the medicine lodge, the family of the sick person must provide food for the chanters, sand painters, dancers, and all others who aid in the ceremony. Besides this expense, the medicine man makes a considerable charge for his services, particularly if he is noted for his cures. Sometimes a family's entire savings will be spent in celebration of one of these chants.

To the tourist journeying far through Navajoland, an unusual spectacle on a winter night is the great Yeibichai dance. This takes place on the ninth night of the Night Chant, the chant being delayed until after frost, when all the herbs needed in the ceremony have been gathered. Literally, Yeibichai signifies, "Grandfather of the gods."

A painstaking description of the elaborate rites of this ceremonial concluding the Night Chant would be extremely tedious. For nine

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days the medicine man and his helpers have already toiled arduously—brewing native herbs to use as medicines, cutting and painting prayer sticks, singing holy songs and making the sand paintings upon which the sick person is seated during the ceremony—and by the ninth night the medicine man has become weary and often hoarse from singing. But now, whether the patient is better or worse, it is time for the Yeibichai.

In the center of the field, four or more huge cedar-log fires flare on each side of a wide swath reserved for the masked Yeibichai dancers. This space is between the medicine lodge, where the patient waits, and the brush shelters built to serve as dressing rooms for the rival teams of dancers.

In the background, around individual family fires, camp the Indians, cooking and taking care of their children, or warming themselves as they sit stolidly watching the performers. And still farther back are the horses, unhitched, and heaps of snarled-up harness, covered wagons and automobiles.

Usually the ceremonial is held not far distant from a trading post, and the colorful personality of the trader as well as the accom-



A SWEAT HOUSE IN CANYON DE CHELLE.

ARRIVING AT A TRADING POST IN SHIPROCK.



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modations he can offer the tourist tend to influence the enjoyment of a white visitor on such an occasion. Still so much of the significance is missed by the casual, uninformed spectator that in reality the ceremonial may mean but little to him.

But to anyone versed in Navajo chant lore, it is worth-while to wait even until dawn breaks back of the eastern hills, the time for the Bluebird Song, the conclusion of the Yeibichai. With few exceptions, men are the singers of the tribe and zealously their voices rise in a quavering falsetto in offering this supreme tribute to all the gods. Then the Navajos take corn pollen from their medicine bags and after touching it to the tips of their tongues, toss it toward the heavens while murmuring a prayer for health and happiness.

Not only before a ceremony but sometimes as often as two or three times a week the men take a bath in one of the sweat houses. This conical structure, usually not more than four feet from the ground at its highest point and with floor space not exceeding four or five feet in diameter, is without a hole in its apex for within it a fire is not lighted, temperature being increased by means of heated stones

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which are rolled in from fires outside. To induce perspiration, sometimes ten or more bathers crawl into the hut and, after the entrance has been closed with a blanket by the last one entering, water is sprinkled upon the hot stones.

Women, too, indulge in the luxury of this primitive bath, but always alone, and not as frequently as the men, for women and children are wont to take their baths within the hogan. Nowadays, however, with the establishment of bath houses in some of the community day-school centers, which are among the more recent undertakings for the benefit of the Navajo, the men as well as the women and children are taking an ever-increasing advantage of these facilities.

CHAPTER IV

THE QUEST FOR FOOD

The Navajos have quite thoroughly explored the native munificence which their land, none too generous, concedes in the way of food. Back in the early days they sustained themselves by their gain from the chase and on fruits and seeds of wild plants when, owing to conditions of war and constant change of domicile, the marauders were unable to possess themselves of corn. Deer, formerly more or less plentiful, no longer roam in this region, and many of the seed-bearing grasses have been grazed to death by the ever-increasing flocks and herds. Today, sheep provide the main meat ration and in areas where conditions permit, Navajos are breaking ground and cultivating their own crops. Contrary to popular belief many a Navajo makes a good farmer.

Through centuries of facing the elements in an isolated country, these impoverished Indians learned to live off their land, learned to

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sustain themselves not only by game but, having become acquainted with the various plants, they discovered which of these plants were good for food. And today, as they go about their daily tasks in such a quiet, unassuming way, the newcomer would hardly suspect how much useful knowledge the Navajos really possess. If any plant of their domain has nutritive or medical value, in all probability it has not only been utilized by them but, like many other expressions of Nature, this manifestation has been personified and the story fused into their ceremonial songs. Nowadays, however, owing to alien contact, the younger generation do not give as much attention to seeds, roots, herbs and flowers as their ancestors found it necessary to do.

But to the older folk, well versed in plant lore, an important family of plant life is the "cactus people," found among the sands and rocks, and which, like the Navajo, has grown adaptable to hardship. Although cacti are not as numerous in variety on the reservation as farther south in Arizona and New Mexico, still the Navajos have discovered that several species of cacti found within the limits of their country yield an edible fruit. And each fruit

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has a distinctive taste, varying from the strawberry-like flavor of the Heart Twister Cactus of the piñon and juniper country, to the fig-like flavor of the Sitting Cactus growing on the borderland of the Painted Desert, drawing sustenance from the vari-colored sandstone for its brownish-green stems and purplish-red blooms.

Probably there are very few native plants for which the Navajos have not distinct and well-chosen names. And it is little wonder the Heart Twister Cactus is so called. For there is an old, well-known legend which tells how during the troublous wanderings of their tribe they relied on the fruit of these semi-desert plants for food. Particularly did the aroma of the ripe, juicy fruit of the Heart Twister Cactus allure them. They ate freely of it. And their "hearts were twisted in pain!"

And cacti provide the wayfarer with water, too. Under desperate desert conditions, sometimes the whole stalk, after taking off the spines, is wrapped in a cloth, and then squeezed for the juice it yields. Nor do the small desert animals, gaunt and thirsty, pass these plants by, for the succulent stems usually show the depredation of small teeth.

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Even to the casual observer, each variety is worth a second glance, especially the Wide Cactus with Thorn-rimmed Fruit—a longish name, but not too tedious for the Navajos in Canyon de Chelly to painstakingly say when they wish to be discriminative. For here, in September, when the crimson fruit of this plant dots the landscape along the canyon washes, the Indians eagerly gather it with a forked stick, using a branch from another plant which they call a “spine brusher,” growing nearby, to stroke off the thorns. And though containing numerous large seeds, so pleasing is the taste of this thorn-rimmed fruit that some of it is sure to be eaten at once, the rest taken home to dry, and later to be made into sauce.

A close companion of the cactus in the lower altitudes is the yucca, with its basal cluster of rigid linear leaves and its central stem of many creamy cup-shaped flowers, blooming in late May and in early June. In initiating boys into the formal rites of the Night Chant, two sword-shaped leaves from one variety of yucca, the Spanish Bayonet, are used to lightly smite the boys' backs to make them acquainted with the stern “yucca people.” Of this same

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variety, Indians slice the ripe fruit and then dry it in the sun for use in winter. When fresh this fruit has a peculiar sweet taste. Some Navajos know the secret of making a delicious jelly of it. As much time and labor are required to obtain the yucca fruit, many families journey to places where it is abundant, spending a week or more in securing a seasonal store.

But of all the wild vegetal products of this diversified land, perhaps the nut of the piñon tree is the most staple article of Indian diet. By October, the seeds of this small, rather scraggy pine are ripe in the cones and later drop to the ground. Naturally enough, many of these sweet little nuts are quickly carried away by pack rats to their caves. But the Indians endeavor to harvest the crop early, so when the frost begins to nip, many of the Navajos, mostly women and children, start off in covered wagons, on horseback, or in old autos, for the nut-bearing sections, to camp there a week or more.

Diligently the children pick up all the nuts strewn on the ground and sift the dirt from them through a wire screen purchased from the trader. Cheerfully, too, the children work, ever thinking of the possibility of going to the

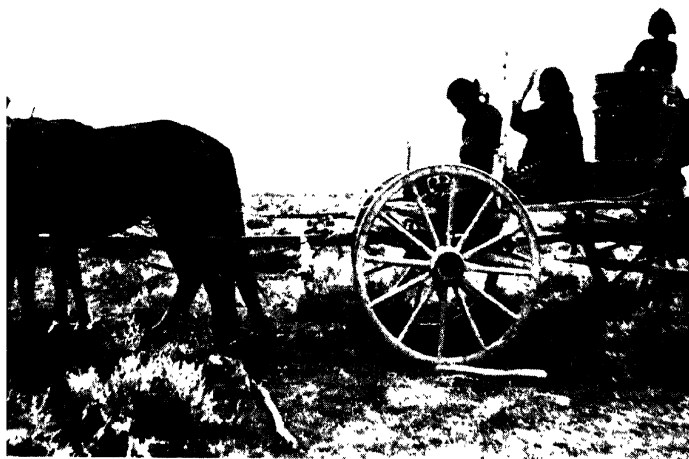
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trading post with their mother to sell some of the crop in case they are able to gather more than the family needs.

Tarpaulin or blankets are then spread on the ground beneath the branches and the piñon harvesters shake the boughs with sticks until all the ripened nuts have fallen. Sometimes large quantities of the unseasoned cones are gathered from the trees and taken home, where they are dried until the smooth brown nuts drop free.

Toward dusk, straggling Navajo boys are sometimes seen returning, each with a sack full of nuts on his back. Appearing on a mesa rim, they start sliding down the declivity, with their faces to the wall, but descending with ease and agility.

While gathering piñon nuts on the high mesas in November, 1931, several hundred Navajos were overtaken by a great storm, when there was a snowfall of nearly five feet. To relieve the distressed harvesters, trains of pack horses trudged their way through high drifts, and airplanes were employed in dropping food and blankets down to the marooned victims. All the piñon gatherers did not



HAULING WATER FOR COOKING, DRINKING AND OTHER DOMESTIC PURPOSES.

CALICO, VELVETEEN AND A PENDLETON SHAWL ARE DISCERNIBLE IN THE
RAIMENT OF THESE FEMININE MEMBERS OF THE NAVAJO TRIBE
NEAR A SUMMER SHELTER.



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emerge with their harvest that season, for many of them perished.

Each year piñon nuts are becoming more and more important commercially to the Indians, and the traders order sacks for the shipment, telling the harvesters to bring in all the nuts they can gather not needed for their own use. Some Navajos consider a good piñon year as much to be desired as a good wool year.

While in arable areas corn, beans, and squash have long been staple foods yet within the last few decades the Navajos have been raising by means of flood irrigation, not only increased amounts of such crops, but adding to the list wheat and oats, also alfalfa for fodder. But the family that still is without a garden patch usually depends on the trader for cornmeal and flour as well as preserved vegetables. Canned tomatoes are eagerly sought, and consumed with avidity in this thirsty land. And here, fortunate indeed is the Navajo who has a bumper crop of watermelons: he is temporarily independent—of springs and wells!

As the usual hogan is not adapted for storing a large amount of food, the winter supply of vegetal products, including piñon nuts and

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grain, is stored in pits which are dug near the dwelling or in a field. The pit is then covered with earth, sticks and bark, the Indians exercising every precaution to make the spot appear undisturbed.

In the dry atmosphere of the Navajo country, meat does not decay when exposed to the air but dries and cures, and for centuries the Indians have been preserving it by this method. In preparing the meat for preservation, it is usually cut in thin slices and then stretched and hung on a line to cure and dry. Thus the meat is given a hard rind, impenetrable to the sting of flies and can be kept indefinitely; in this form it is convenient to carry long distances and at any time can be rendered pliable again by pounding it with a stone.

Because of a taboo long established against them, fish and any water animals are not eaten, for to these the Navajo has given special sacred names in his chants and myths, water—upon which everything depends—being to him a sacred element. But it is interesting to note, however, that the shell of the turtle is used in making beads, and the skins of the beaver, the muskrat and the otter in the making of his headgear. Waterfowl are classed

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as fish. While nowadays many Navajos, especially the younger generation, do not object to canned fish, the more conservative still maintain it should not be touched in any form.

Various birds are held sacred, too. Chief among these are the "eagle people" which make their nests, rough tangles of sticks, high on inaccessible cliffs or in the lofty boughs of the giant Douglas firs. At times eagles, and hawks allied to them, are trapped by the Navajos, though usually released after the large tail feathers and the down desired for use in their ceremonies have been plucked. The hunt is accompanied with formality and song, and though some Navajos occasionally partake of the flesh of certain varieties of eagles and hawks, these birds are tabooed as food by most of the tribe.

The butchering is usually done by the women. It is interesting to watch one of them vigorously skinning a sheep, later hanging the meat high on a pole or in a tree, to keep it away from the dogs. Although mutton is considered their main meat dish, goat meat too is commonly eaten, and even the prairie dog does not escape the stew pot, for it is claimed by some Navajos that the meat of this little ani-

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mal is more appetizing than jack rabbit. And inasmuch as the innumerable prairie dogs are the most destructive rodents on the range, and their extermination to be desired, the use of them as food might well be encouraged, provided there are no nutritive objections. It is generally believed that a prairie dog will eat twice his weight of grasses and roots in a week.

Scattered on upland plains are prairie dog "villages," some of the "inhabitants" of which may be seen running about gathering herbs. Others of these little "vegetarians," motionless as stakes, sit on mound-shaped watch towers, earth thrown up about the entrance to each of their burrows. But at the approach of danger these little animals scramble for safety to their underground chambers, the opening to which is not infrequently guarded by a small spiny cactus called by the Navajo, "It Bites!" And sloping away on all sides from the entrance, the hard packed mound of earth prevents water from running down into the burrow during a heavy shower. Nevertheless, prairie dog dwellings in the vicinity of streams are sometimes inundated, especially along arroyos in the rainy season. The flood-stricken victims emerging are quickly snatched



"THE OLD MAN OF CANYON DEL MUERTO," V
COTTON TROUSERS SLIT UP THE SIDES. INDIAN
WRITING CAN BE SEEN ON THE CANYON W



NAVAJO MOTHER AND CHILD, IN SIMILAR ATTIRE, IN FRONT OF THE
TRADING POST AT THUNDERBIRD RANCH.

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or killed with a stone by the ever-vigilant Navajo, who takes advantage of this opportune time to go forth in quest of hapless prairie dogs.

Attending to the cooking, women bustle about. Cornmeal dumplings are rolled and ready to boil over a cedarwood campfire, or cakes are being prepared to cook in a Dutch oven. Freshly-stewed dried fruits diffuse their fragrance with the savory odor of roasting mutton ribs skewered on saplings before the fire or with that of spitted haunches broiling on the embers. The most frequent form of meat preparation, however, is the mutton stew and usually a pot of it is kept simmering on the fire, that is when there have been no great droughts or blizzards. But in lean years, after summer clouds form and dissipate in vain, or winter ends without a big snowfall, such comparative affluence dwindles to the vanishing point; then, their mainstay is bread and coffee.

Throughout the greater part of the reservation, fresh milk is scarce for, owing to an overgrazed condition of the range, the Navajos' herds of goats are now greatly curtailed, some of the remaining goats yielding very little

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milk; too, there is an absence of dairy cows throughout much of this country, save near the boarding schools, hospitals, missions, and other such important centers.

Long periods of hunger at one time, extreme feasting at another, as well as the nature of their food, possibly deficient in the required vitamins, may have been, and probably still are, contributing factors to the impairment of the health of some of these Indians, as evinced by their lack of disease resistance. Yet, on the other hand, the healthful outdoor life and the steady activity required in the care of the sheep discourage the spread of disease among the Navajos and help to keep them strong and fit.

Meals are ordinarily served on a table of tarpaulin spread on the hogan floor or on the ground near the campfire. Knives, forks, and dishes in the form of plates, are not always considered indispensable among this roving tribe. Mutton is often torn in shreds and sociably passed from hand to hand. And it is quite common for two or three to share a single tin cup of coffee. Only a few of the older Navajo women still make their own cooking utensils; the younger ones do not practice this

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art. Iron camp kettles, tin cups and enamelware coffee pots have now almost completely displaced the gourd ladles and earthen jars.

Savory breezes, spreading the news of freshly-cooked mutton, tempt the family's faithful but often sorry-looking dogs—invaluable assets in herding the flocks—to emerge from their shady retreat beneath a wagon, to stand close by and eagerly wait for the meal to end for, perhaps, the pots may be set to one side for them to lick.

Later tobacco is brought forth and, sometimes, cornhusk cigarettes are rolled and smoked. Navajo men loll along the shady side of the hogan. Their tethered horses, already fed and saddled, wait in three-legged repose.

CHAPTER V

SOME ASPECTS OF DRESS AND JEWELRY

With the coming of the Indian trader and the reformer, both private and governmental, the Navajo loom ceased more and more to be the arbiter of Navajo fashion. The various types of native woven garments, especially those of the men, have all but disappeared. And it is barely possible that more than a few of the older women still cling to the long-characteristic costume, woven in two pieces of identical size and pattern and then joined. This standard style of woman's dress—worn from the early days of Navajo weaving down to the dawn of the twentieth century—was possibly set by an earlier native dress consisting of two deer skins sewn down the long sides, a style following the earliest Navajo garb of yucca and grass fiber. Today, overalls and garments of corduroy, bright-print calicos and colorful velveteens hold the field.



EVEN AN OBVIOUSLY POOR NAVAJO, LIKE THE
SHOWN HERE, OWNS A HORSE.

**SHEEP WATERING AT AN EARTH DAM MADE TO CATCH AND HOLD FLOOD
WATERS : RIO PUEBLO COLORADO WASH AT GANADA.**



DRESS AND JEWELRY

But a reminder of bygone bow-and-arrow days lingers in their fashion of still wearing a silver-mounted leather wrist-guard, even though it is worn only as an ornament. A prevalent but more practical survival of their early dress is the comfortable buckskin moccasin dyed a dull reddish-brown and soled with rawhide, though in all parts of the reservation not too distant from the trading post the American shoe has won favor. Particularly in great demand are boys' laced shoes, as the Navajo women buy these for their own wear, too.

Except for ceremonial occasions, most Navajos do not deem unsuitable the white man's attire: men's corduroy suits of American style are common; in Government work camps the ubiquitous overalls are not disdained. But in areas more remote the old cotton trousers slit up to the knees are still worn by some of the older men.

The velveteen blouse adopted from the Spaniards and favored by both sexes is regarded as an almost distinctive tribal garment. Sometimes it is decorated with an array of buttons, made of silver dimes, quarters and half-dollars, and girdled with a belt consisting of

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large disks of silver strung upon a strap of leather.

With this velveteen blouse the women wear long voluminous skirts of calico or sateen—and many of them! Sometimes the edges of five can even be counted. Often the social rank of a Navajo woman is indicated not only by the number of her bracelets, rings, necklaces and the coin buttons on her moccasins, but by the number of skirts she wears. In these twelve-yard-wide skirts, she mounts her horse with ease. Sometimes, jogging in a shawl at her back is a wide-eyed papoose, while lashed to the rear of the saddle is a bag containing not only provisions but from which, like as not, peers the family cat.

From the highways and the byways of this far-flung Indian country we see gaily-clad women and girls at any season of the year, their wide skirts swirling round them as they walk behind their flocks. Besides catering to prudery, these ample skirts not only afford ease of movement but protection from the inhospitable desert vegetation, especially should the shepherdess choose to sit watchfully on a hillside while tending her flock. The Navajo shepherd girl has a tactic too, all her own, of

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lifting her billowy skirt at one side and flaunting it with a designative gesture, attracting the attention perhaps of only a sheep or two as she signals—but the whole drove advances!

While the trader supplies a limited assortment of ready-made wearing apparel of the American type, characteristic tribal garments such as the velveteen blouse and calico skirt are made at home from materials procured at the stores. In the less remote regions some of the more well-to-do women with homes more or less permanent possess sewing machines; but the roving Navajo woman seems quite content to sew the family's garments by hand rather than be encumbered with this implement. Often the children are dressed in almost exact replicas of their parents' costumes. But the new-born babe is likely to be wrapped in a sheep pelt, woolly side in.

Knitting, too, is a practice among the Navajos. But no more are the knitting needles made of the slender twigs of the black greasewood, for now needles of steel can be purchased at the trading post, when not made at home of wire broken or cut to the proper length and ground on a stone to obtain a smooth blunt point. In Navajoland knitting

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is not distinctly a woman's pursuit for here, oddly enough, the men too engage in the industry, the output of which nowadays is limited to leggings, mittens and gloves.

In winter, the men take kindly to the American heavy cloth overcoat—when they can afford such indulgence—and to the leatherette jacket, too. But in all seasons, no matter how high the temperature may be, the women still persist in wearing blankets. But these are not of native make, for today the product of the Navajo loom is made to sell as rugs. When a woman wants a blanket to wear, she goes to the trading post and buys a fine, pliable Pendleton made of Oregon wool, much more suitable for use as a garment. For, although the old-time blanket of native weave was warm, watertight, and could turn the driving sand of the desert windstorm, it was unwieldy and required much managing. Today, at the ceremonials, it is a colorful pageant to behold a crowd of Navajos—not only women but men and the young folk, too, even the little girls—each wrapped in a brilliantly patterned Pendleton, the women's usually with long fringes.

Dame Fashion of Navajoland dictates that the women shall leave the head bare though,

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in summer, she does permit them to carry or use in riding or driving an umbrella—if by chance one can be procured—as a protection from the torrential showers, of course, but more frequently as a parasol. The men are abandoning their old head-dress, the gay-colored bandeau which usually encircled their lustrous black hair—black as pine charcoal!—and adopting the wide-brimmed fedora or the Mexican straw hat. Near the railway towns, the Navajo men have quite generally espoused the white man's dress except for ceremonial occasions, but the women, particularly the older ones, still cling to the velveteen blouse and the expansive calico skirt.

Considering the scarcity of water and the dirt floors of their hogans, these Indians are relatively clean. Naturally, in cases where all water must be transported from afar on a burro, it is too precious to be used unstintedly. The root of the soapweed, a slender-leaved yucca, is crushed or shredded in water to make a suds for laundering and bathing purposes. The Indians wash their hair, too, in this foamy water. In fact, soapweed root is used as a substitute for soap to such a degree as to denude great areas of the plant.

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Besides his costume for ceremonials, the wardrobe of a Navajo often consists merely of the wearing apparel on his person. Such a sole everyday outfit is never washed but worn steadily until it becomes useless, then discarded.

Although many of the younger folk—those who have attended school—wear their hair cut short or arranged in some other American style, many of the older men and women still keep to the custom of wearing their hair long. With a comb, or a brush made of grass stems tightly bunched and tied, the hair is drawn smoothly to the back of the head where it is done up into a compact club and tied with a white woolen twine so as to give it an hour-glass form. And if the newcomer were to look carefully perhaps he may see, fastened in the knot of twine, a tiny turquoise bead—a treasured good-luck charm.

Both sexes wear much silver jewelry of native craftsmanship. Ornaments of this kind have displaced those of copper and brass. The glass beads, too, of earlier days are regarded with contempt for, now, strings of valuable turquoise and coral are sought. Sometimes these precious adornments constitute the In-

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dian's only collateral and not infrequently he may pass them across the counter in exchange for merchandise. The safekeeping of such jewelry becomes one of the trader's greatest responsibilities.

The Navajo silver ornaments have long been the best known of all American Indian metal work. They are worn by the whites too, and even the less discerning visitor to the American Southwest today can hardly fail to notice the profusion of this type of jewelry. It is for sale at all the trading posts, at jewelry shops, and by dealers in curios. Even in the Dime Stores, imitations of this primitive style of personal adornment may be purchased, some of it captivating though much of it, less prepossessing. But genuine Navajo silver-work is not like any other kind of jewelry one has ever seen!

The general belief among authorities is that the art of working metals was introduced among the Navaos, or at least more elaborated by them, since the time they have been dwellers of their present domain. The old smiths of the tribe maintain that the art of working silver was introduced among them by the Mexicans about the middle of the nineteenth

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century. There is still, however, ample room for further research into the history of Navajo silversmithing, for the more intent person who has seen the beautiful ornaments, made of gold, by the primitive Indians of British Columbia and Alaska—many of whom are of the same linguistic stock as the Navajos, although far distant from them in habitat—is apt to ponder the question as to whether the Navajos derived the craft of metal working from a people higher in culture than the tribe itself.

Formerly the Navajo smith used only silver coins—Mexican dollars and United States dimes, quarters and half-dollars—and his tools were few and of the crudest kind. Probably because of the limitations imposed upon him by his meager appliances, he developed a style of such simplicity of design and beauty of proportion that his work attained a high aesthetic value.

In the early days this distinctive and unmatchable silverwork was made exclusively for the use of the Navajos themselves or for trade with other Indians. Buttons, silver bosses for belts, rings, bracelets, necklaces, ear pendants, ornaments with which to adorn his



A WINDMILL PUMP IN A DUSTY VALLEY WHERE
HAS BEEN DRIVEN. SHEEP ARE WATERING
CEMENT TROUGH.

AT THE TOHATCHI SHEEP-DIP: THIS SQUAW SEES TO IT THAT THESE
RAMS GET A GOOD DOUSING!



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leather bow-guard, and even decorations for the horses' bridles, were all made from beaten or molded silver and enriched with simple decorative designs engraved or chased with a sharp pointed tool.

In making a molded piece the smith poured the molten silver into a cast of the desired shape, chiseled in stone; but today this practice is rare, for a great change in the methods employed by the craftsman occurred when the Navajo smith ceased to make jewelry for the use of the Indians only and the product became commercial. Then, with an increasing number of tools at his command, in addition to the demands of the white purchaser, there developed an elaboration of technique accelerated by the innovation of insets of garnets—the Arizona “rubies” of commerce—and peridots, both natural mineral resources of the reservation. In one locality are garnets found in such quantity that the name, Garnet Ridge, seems quite justified. Turquoises, too, came into use as insets, the early stones being obtained from the Cerillos mines near Santa Fe. Unlike the commercially cut and polished insets used by the Navajos today, the

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old insets were cut by the Indians themselves, and not brilliantly polished.

But as it was believed a lighter and more decorative type of ornament would be more usable and more salable, another great change in Navajo silversmithing occurred with the introduction of sheet silver. Much of this modern jewelry can be readily identified by the thinness of the metal and the profusion of the design. But the heavy silverwork of earlier times is not deemed so unsuitable for adornment nowadays as might be supposed.

Of late years an urge toward quantity production and a cheapening trend in the making of these ornaments has been brought about by the tourist market. Some of the designs seen today are not native with Navajos but made with dies cut by the whites into patterns fashioned to make a strong "Indian appeal," and many a sale of such jewelry has been made on the strength of catering to the sentiment of the uninformed tourist who is solicitous of possessing that which typifies his own preconception as to just what is "Indian." Owing to this market for so-called "Indian jewelry," a large quantity of machine-manufactured silver has been for sale.

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But intensive study recently has been under-way covering the whole range of marketing Indian arts and crafts, not only for the reason that the genuine and beautiful in Indian handicraft and art should be preserved, enriched, and protected from factory-made imitations, but also that the economic possibilities, for the Indians, contained in the sale of these articles should be thoroughly explored. Moreover, with the recently enacted Indian Arts and Crafts Act, the use of Government marks is authorized to certify that any article bearing this mark is a genuine Indian product. And those who affix such a mark, or use imitation labels on products which are not genuine Indian ware are liable to be prosecuted.

Today, at the Fort Wingate and Santa Fe Indian Schools in New Mexico, jewelry is being made that is as pure in type and in execution as the best specimens of the early pieces. They are not replicas of the old silver-work, but in fashioning them, the smiths use designs, shapes and proportions that are not influenced by alien taste but are traditionally Navajo.

CHAPTER VI

LIFE ON THE RANGE

In looking back over the past two centuries or more it is apparent that the primary pursuit of the Navajos has been the building up of great droves of livestock, utilizing high arid land by collecting the scanty annuity of native plant crop with their harvesters—sheep, goats, horses and cows. Of late, however, owing to an overgrazed condition of the range, the number of these harvesters has been curtailed.

But in this gaunt country, not all of the range vegetation that comes to the “mill” of the grazing flocks and herds is grist. Yet there is, besides grasses, another source of provender, known as browse, which includes the green shoots of various woody shrubs as well as the leaves and tender twigs of the willow, scrub-oak, aspen, alder and sycamore. But, indeed, it is more than likely that in the course of time every accessible possibility of browse—even the bayonet-like armored bud of the yucca—is explored by the ever-hungry harvesters.

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In areas where large trees cannot endure, owing to extreme aridity or excessive alkalinity, often various shrubs are able to survive. For Nature, in her prudent economy, equips the shrubs with foliage of small growth so that there shall be no unnecessary exhaustion of moisture. While a few species are poisonous and others so unappetizing as to be grazed only under the spur of starvation, yet the lowly shrubs are not to be overlooked, for some are both palatable and nutritious.

One of the more prevalent growths in the shrub habitats is the common variety of sagebrush. With its persistent little grayish leaves tilting their margins toward the parching sun, this bushy plant, spread in scattered, open growth over vast stretches of accessible range land, forms a desirable browse. Its immense root system possesses sufficient vigor and aggressiveness to defy overgrazing and in winter and early spring, when other forage is scarce, the sun-cured leaves and twigs of this aromatic shrub are often the mainstay of the flocks.

But of all browse, one of the most appetizing to sheep and goats is the mountain mahogany. Adapting itself to various soils and situations, few shrubs more successfully resist

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drought and, though found in the draws of hills and in canyons, it is capable of adjusting itself to higher elevations, too. But throughout the year its enticing, tender shoots and twigs never escape cropping; in fact, this woody plant is grazed almost to death.

A less appetizing browse is the greasewood, but on account of its odor when wet is also known as the creosote bush. A whiff of it after a summer shower and one is not likely to forget its strong, tarry scent! Nature supplies this shrub with a resinous-like sap which varnishes its leaves, making evaporation almost impossible, and its viscous foliage stays a dull olive-green all winter, presenting a semblance of growth.

With roots descending to a great depth, probing here and there for water, the creosote is unconquerable by drought. The ever-present thickets of this sparsely leaved bush afford convenient lurking places for that undefeated predator, the coyote, as he skulks along the arroyos and washes, living indifferently on lambs and mice or, in lean times, tracking down a sick or wounded animal, though in an emergency he may make himself content by devouring a lizard.

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And be the gravel slope ever so sun-baked and bare, still the resistant creosote carries on, defying the elements even after the ingenious cacti have dropped out of the contest. Truly akin to the wastelands is this persevering shrub; around it one is wise to tread with cautious step, ever alert for a mosaic-like pattern—the back of a diamond rattlesnake—coiled in its meager shade.

Besides their sheep, the Navajos own a considerable number of goats, horses, cows, burros and mules. In some areas, where there is good grazing, the Indians count their wealth in horses and cows. But almost every family keeps at least a few horses and poor indeed is the Navajo who has not a horse to ride. Formerly their horses were small and of inferior breed but in recent years the Government has improved the stock considerably.

Most sections of the reservation, however, are better adapted for the raising of sheep and goats, and the main wealth of the Navajo today is in his sheep which, by dint of their ability to cover a lot of ground, make a living under desperate desert conditions. These animals are one of the hardiest breeds of sheep in the world—they have to be!

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In this land of little water—and many sheep—every spring and waterhole is carefully conserved and becomes a center, flocks moving to and from it on their way to pasture. Thousands of gullies have been formed by the hoofs of sheep and goats traveling in single file to the same waterholes day after day.

For miles around these sources of water the stock tend to graze, never giving these areas a chance to rest, recover and reseed. Sheep, because of their mobile lips and sharp incisor teeth, are adapted to feeding on short grasses, and with their pointed noses it is possible for them to crop the grass down into the ground, thus killing the roots.

More wells, with and without windmills, are being developed, where they are not too expensive to justify construction, and many low-earth dams are being made to catch and hold flood water, thereby increasing the number of stock-watering places, thus avoiding continued concentration around the existing waterholes.

As sheep cannot keep fit if compelled to travel too far between food and water, and owing to the Navajo practice of returning the flock to its corral each night, it is desirable



IN REMOTE MONUMENT VALLEY, A NAVAJO IS BOUND FOR THE TRADING POST WITH A BUNDLE OF HIDES BROUGHT FROM AFAR ON HORSEBACK. NOTICE THE LEATHER WRIST-GUARD WORN BY THIS INDIAN.

A SHEPHERD-GIRL WITH HER FLOCK IN A CORRAL.



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that, in order to take advantage of any natural forage, watering-places be conveniently situated over the entire rangeland of the reservation at points not exceeding seven miles apart, each supply sufficient to care for several hundred sheep. To achieve this, the storage of surface water as well as the reclamation of ground water is essential.

It is customary for the Navajos to run their sheep and goats together, the flocks ranging from several hundred head and even more down to fifty head or less. And if a flock is not large, the owner is quite likely to know each one of his sheep by name. But a wealthy Navajo, still living in a primitive hogan in the vicinity of Ganada, owns a flock of almost 3,000. However the number of sheep per family averages somewhat more than four hundred. If dependent upon the product of the sheep alone, a Navajo family of not more than seven needs at least one hundred and fifty sheep for mere existence. For convenience, animals belonging to various members of a family are herded together, though personal ownership of each animal is always kept clear by earmarks.

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Previously their goats were mainly of the short-haired variety, but recently some enterprising Navajos have been increasing the number of Angoras. The meat of this variety, the Indians say, is as good as mutton, and the long silky wool is in ever-growing demand, especially by manufacturers of velours and mohair stuffs.

Goats scatter the sheep and keep them on the move, and when deprived of valley and mesa grass the flocks climb the rocky hillsides and steep mountain slopes, browsing intensively on the brushwood until it is destroyed; then the thin soil departs, leaving the gaunt rock ribs standing stark and sterile.

But the Navajo country has long been overgrazed. In 1933 specialists reported that its actual capacity had declined to nearly 550,000 sheep units; carefully used the range might have supported a million. But in 1931 the number of sheep and goats had reached an all-time peak—nearly a million sheep and more than a third of a million goats. In addition, there were horses and cattle numbering in all nearly 70,000 head, each horse rating as five sheep units and each cow as four.

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Through an agreement, made in 1933, between the Government and the Navajo Tribal Council, the Indians have co-operated in reducing the numbers in their flocks. As a relief measure, the Government has already purchased, at a nominal price, thousands of the animals overpopulating the range, thereby effecting a reduction in the all-time peak amounting to almost 25 per cent. of the sheep and almost 70 per cent. of the goats. Yet, through a Government policy directed toward restoring the range and improving breeds, demonstrations on the Navajo area now tend to convince the Indians that a limited number of ewes on good grass would supply a larger number of lambs and a greater wool-clip than could be obtained from twice the number of ewes maintained without proper management on a depleted range.

Considering the unequal distribution of sheep and goats among the Navajos, the number of grazing head, in 1933, was just about enough to supply the majority of the tribe with an income barely sufficient for subsistence. Since the world-wide depression hit the Indians too, their markets for wool, blankets and silver jewelry dwindled. Over-

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stocked with such merchandise, the volume of credit which the traders could extend to the Indians was necessarily curtailed. Money does not remain long in the hands of a Navajo, for generally he buys much-needed clothing and groceries, and more often than not he is improvident as regards the future. With him—"today" is enough.

But work projects, with native materials and with native labor, are now under way with the view to offsetting the loss of income to many of the Indians during the stock-reducing period. Some of these construction jobs are under the supervision of the farm agents of the Indian Office, but the greater number are controlled by the Soil Conservation Service of the Department of Agriculture. But the Navajos are debating among themselves, "What if the work gives out before the range is restored and the flocks built back?" Pondering this question, they are reluctant to further reduce their flocks; sheep and goats have been their savings banks for years.

Formerly the Navajos raised sheep only for meat and the use of wool for handspun textiles, but with the advent of the white man and the railroad, wool from the Navajo country

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entered the outside market as a raw product. Their sheep have long, hair-like wool, well adapted to the traditional method of hand-spinning, still practiced. The wool is not tightly crimped; being open and free from excessive grease, it does not hold the sand and dust of the desert and is easily washed white in suds made of yucca root and cold water. For commercial purposes, however, the fleeces of the Navajo sheep are scanty, running from two and one-half to five pounds, and this raw wool, which must now compete in the markets of the world, rates with the lower grade of felting and carpet wools. It would seem, therefore, that the Indans would be much better situated economically if they could succeed in improving the quality and the quantity of their raw wool product so that it would rate higher in the outside market without impairing its worth as a handspinning textile material, and without reducing the sturdy qualities of the present stock of Navajo sheep.

Originally, the flocks of the Navajos were Spanish merinos; later they were mixed with other breeds of sheep, many of which were believed to be Kentucky Cotswolds. But be-

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cause of year-after-year non-segregation of rams and ewes, besides scant water and food, and ill-timed shearing, attention must now be given to determining, by study and controlled experiment, the best breed for the economic and environmental problems involved. Hence, genetic work directed toward building up a breed of sheep adapted to Navajo country climatic conditions, whose wool will be not only suitable for the weaving of Navajo rugs but at the same time salable in the open, raw-wool market, is now under way at a sheep-breeding laboratory on the reservation.

Rambouillet sheep have been found well adapted to the range conditions peculiar to the Navajo country, and they are also good meat producers. Though heavy shearers of a fleece of high quality, the wool of this sheep is short and fine, and so closely curled that the Navajo woman with her simple cards and spindle cannot straighten out the tight little knots. Being excessively greasy, too, it is impossible to clean thoroughly by the Navajo method of washing wool, consequently it does not dye evenly; blankets woven of such wool are not only knotty but marred by unsightly streaks.

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Though some Navajos breed their sheep at any time, in well-regulated flocks Spring is the season for lambing, and for this occurrence a brush corral is built as near water and grass as possible. Sometimes little brush pens, too, are made for the unmotherly ewes which refuse to recognize their new-born offspring. Not infrequently the ewes have twins and, occasionally, triplets, hence the increase is sometimes surprisingly great; but there may be a drought or a blizzard, killing off a large number. Even many of the older animals come to a miserable death through thirst and starvation, and here and there over this vast, arid plateau may be seen their bleaching bones—emblematic of the predacious spirit of the desert.

For the prevention and curing of scabies, the Government requires that flocks be dipped at least once a year, and for this purpose provides at each district the heating plant, the runways and other facilities. During the dipping season, sheep and goats in large numbers arrive at these dipping centers. Sometimes it is necessary for flocks to be held for two or three days at a distance, each flock awaiting its turn to pass into a large corral-like en-

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closure, serving as a station. Since the Navajos are aware of the possibility of such a delay, they pack all requisites—food, cooking utensils, fuel, blankets, and hay—into a wagon or automobile when starting off for this important event.

Busily engaged about the dip is an inspector, supervising the work of the men, women and boys who attend to the dipping. In the background, horses, unhitched from their wagons, are tethered to gnarled junipers. Nearby, a few bough arbors have been erected, and now and then from a pole in the shade of one of these arbors hangs a sheep, just slaughtered, ready to be butchered and then cooked. Curls of white smoke, infused with the fragrance of cedar and the good smell of roasting mutton, rise in the air. Coffee pots, too, are over the fires while women diligently pile high newly-fried cakes of bread. Navajo men congregate in small groups to renew acquaintances and pow-wow over tribal matters or exchange the gossip of the countryside.

Meantime several hundred ba-a-ing and plaintively bleating sheep and goats mill about in a dipping station from which a narrow chute leads to a long, trough-like vat.



SHE CARDS . . . AND SPINS. . .

IN THE DAPPLED SHADE OF A COTTONWOOD IN CANYON DE CHELLY, THIS
BEAVER SITS ON THE GROUND BEFORE HER LOOM ON WHICH IS SUSPENDED
WARP OF HER OWN MAKE.



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On both sides of the chute stand men and boys with sticks, urging the hesitant beasts toward the jumping-off place already bespattered with the lime-sulphur solution splashed up from the vat. The animals balk; few go into the dip willingly; the others must be grasped and shoved into it!

The dipping solution is of blood temperature and of sufficient depth so that even the largest sheep must swim. On both sides of the vat stand women, each with a long forked stick, with which she keeps up the heads of the animals as she guides them through the dip. But as it is necessary that the head, too, be submerged at least once, skill on the part of the tender is required, for should the sheep breathe or swallow much of the solution or get any of it in their eyes, harm may result. At the other end of the vat the animals run up an incline and are counted as they file into a spacious corral; here the bedraggled beasts, some of them coughing and sneezing, shake themselves and huddle—what a yellow-green mass!

Nearby, at an improvised desk under a canopy of tarpaulin, an assistant makes a classified record of the number of sheep and goats

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dipped. It is here that the owner of each flock pays his bill and receives a receipt, too. The cost of this medication varies, in different years, from one to a few cents for each animal dipped, and when a Navajo has no funds he meets this payment in sheep, or goats, but usually the animals are merely held until the required cash can be procured.

As the dipping procedure is rather a strenuous one for the baby lambs, the Navajo women are sometimes tempted to conceal a few of them, but if all the animals of each and every flock are not brought in, scabies may break out the next winter, when owing to such an unseasonable time, a dipping might prove disastrous. It is the intention, when dipping, to begin the work about July 1st and to complete it on or before October 15th, thus permitting the work to be done in what is believed to be the most ideal time of the year—not late enough to experience any cold weather.

In the late spring is shearing time—a very busy period—when the older folk work diligently from dawn to dark. Nevertheless it is also a festive concourse, scattered members of a family gathering from various parts of the reservation. Naturally enough, then all the

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poor relations are at hand, to get their fill of mutton, bread and coffee, and to receive a little wool for their help. Sometimes the flocks are shorn more than once a year, but if shearing is done in the Fall losses are apt to ensue.

For the shearing a brush corral with a roof is built and the flock to be shorn is held nearby. Steel shears of modern type are used; but a primitive method is still employed in handling the wool: it is thrown into a sack kept open by being fastened around a hoop suspended from a frame high enough so that the bottom of the sack just touches the ground. Within each sack stands a Navajo who tramples the wool down as it is thrown in. No sorting is done on the range except that the black wool is sacked separately.

Partially due to lack of proper facilities for shearing, the Navajo wool has always been in poor shape when marketed, the fleeces being full of sand and mixed together in such a manner as to make sorting almost impossible. It has been generally realized however that the Navajo wool would bring a much better price if put on the market in the same condition as other wools. But no step was taken to

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increase its value until quite recently, when a program was introduced by which shearing pens are to be built at various points on the reservation where the Navajos can bring their sheep and shear them on clean board floors; and in addition the twine necessary to tie each fleece separately when shorn will be obtainable from the trader.

The busiest time at the trading post is after the shearing: receiving, weighing and shipping the wool. During this season, in the early morn, Indians may be seen emerging here and there from out of the horizon. One comes in a creaking covered wagon, another in an old sedan or truck; the occasional well-to-do Navajo in a brand new car, and the least prosperous tribesman afoot; yet another may appear on horseback—all bringing their wool to the stores. Sometimes the wool is wrapped in old blankets fastened with yucca blades, each stitch tied in a knot, almost impossible to undo after the fibre becomes dry.

The trading post hums with enterprise. And although the Navajos have sold their wool and, after much dickering, made their long-planned purchases, they still linger about the counters, one feasting his eyes on a new

PREHISTORIC ABODES IN CANYON DE CHELLY. THE UPPER RUIN IS THE
FAMED AND AWE-INSPIRING "WHITE HOUSE" CLIFF DWELLING. WITHIN
THE FENCED AREA, SEEDLINGS ARE DEMONSTRATIVE OF RECENT WORK OF THE
SOIL CONSERVATION SERVICE. A DWINDLING STREAM LOSES ITSELF IN
THE SANDS OF THE CANYON FLOOR.





BETWEEN THE HIGH, STEEP WALLS OF CANYON DEL MUERTO: SALMON-RED, THE PREDOMINATING COLOR OF THE SANDSTONE, CONTRASTS WITH SILVERY GRAY DEEPENING TO BLACK WHERE FALLING WATER HAS STREAKED THE SURFACE OF THE CLIFFS.

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saddle, another on a shiny, wide-bladed, sharp axe; some ponder the designs and colors in the bolts of bright-hued calicos, while others scan the goods temptingly displayed on the trader's shelves. The store becomes thronged, the crowd tarries. By midnight the trader begins suggesting that they go; perhaps it is one o'clock in the morning before he can clear his store—of Indians!

The wool is sacked and kept piled high outside until the trader is ready to haul it to a wholesale house near the railroad and to return with a load of stock for his store: coffee, corduroy suits, cook pots, canned goods—everything from gay velveteens to soda pop!

But when the wool season is over, business again slackens for this merchant, and once more he settles down to his humdrum tasks—jostling 25-pound sacks of flour, measuring and tearing calicos, scooping sugar, and cutting plug tobaccos.

Another busy time however is in the Fall when the lambs are being marketed: then the trader is likely to be called out at any time to look over flocks as they are driven in. The Navajo women enjoy bringing in their own lambs and doing their own bargaining, some-

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times bringing the animals in from afar, being obliged to camp with them along the way.

For thousands of square miles of Indian country, the town of Gallup, New Mexico, now serves as a distributing center, it being one of the chief points to which the traders take their sheep, wool, cattle, hides, peltry, Navajo blankets, jewelry and piñon nuts. But even before the frontier town of Gallup came into existence the Navajo Indians followed serpentine trails over mesas, through canyons and across arroyos and washes to this same site—their traditional meeting point which they then called, “the place by the bridge.”

CHAPTER VII

THE PRE-BOSQUE REDONDO BLANKET AND THE RUG OF TODAY

The principal product of the Navajo arts and crafts, the far-famed Navajo rug, has gone into homes all over the world. From the raising of the sheep to the finishing of the woven product, the process of rug-making is complete on the Navajo range. Usually the squaws attend to every detail, from the earliest tending of the lambs, which later grown to sheep yield their fleeces to the shearing, washing, carding, spinning and dyeing of the wool, and even to the building of the looms whereon are woven these artistic and useful rugs. The estimated value of the annual output of Navajo rugs, in 1931, reached the million dollar mark.

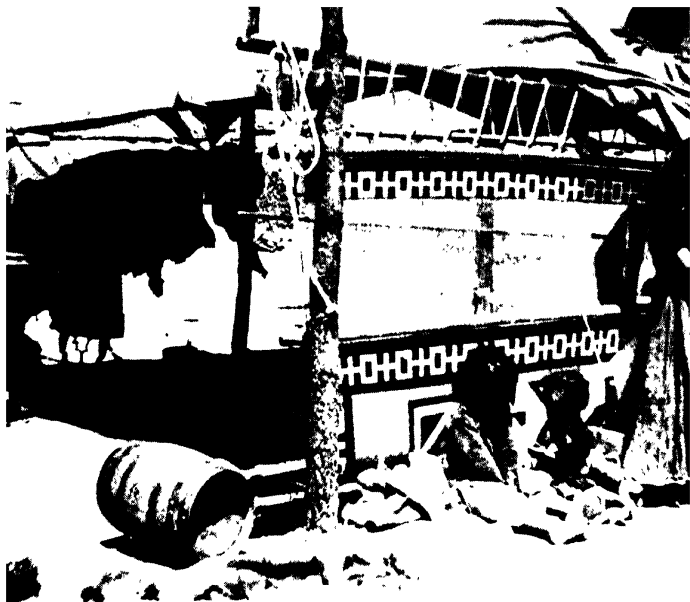
To be painstakingly accurate, however, in referring to this well-known product of Navajo handicraft, one should speak of old-time specimens, those that were woven before the advent of the trading post, as blankets.

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But today, with the exception of saddle cloths, pillow tops and a few dress accessories, one may quite correctly refer to the Navajo weaver's output as, rugs. For this heavy, firm product, woven in such a variety of sizes, some large enough to adorn even a spacious reception or living-room, is well suited for use as a floor covering as it will not only withstand hard wear and tear, but possesses the meritorious quality of lying flat—a real advantage.

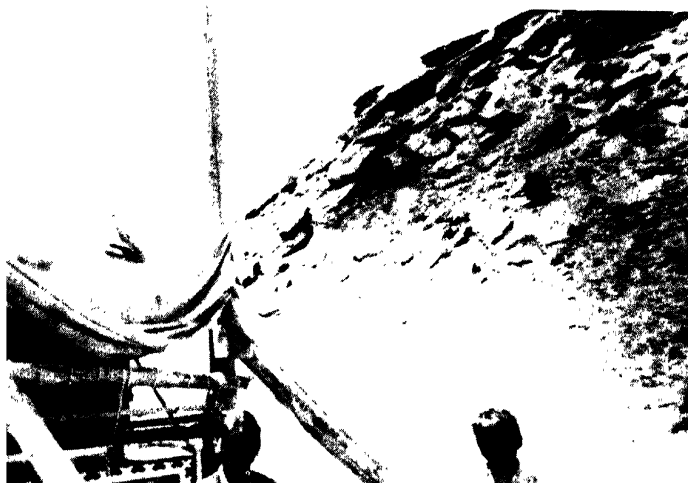
Among authorities it is the general belief that the Navajos had learned the art of weaving by the early part of the eighteenth century, from their neighbors, the Pueblos. Although many instructors were obtained by the capture of women through raids upon the Pueblo dwellings, other weavers of this sedentary tribe found their own way into the land of the Navajos, there seeking refuge from the rebellion of the Pueblos against the Spaniards in 1680 and the twelve troublous years that followed.

But it was not long before the weavers in the roving tribe became more skilled than their teachers in this art, which, though borrowed by the Navajos, was stamped with a distinctiveness so aesthetic by these borrowers



UNDER A SHADE OF TARPULIN ON THE RIM OF THE PAINTED DESERT. THIS NAVAJO WOMAN IS NOT ONLY A WEAVER BUT A SEAMSTRESS WHO POSSESSES A SEWING-MACHINE—AN IMPLEMENT NOT FREQUENTLY SEEN IN NAVAJOLAND.

NAVAJO HOME LIFE IN THE SHELTER OF A SLOPE. IN PRIMITIVE SETTINGS
SUCH AS THIS THE GORGEOUS NAVAJO RUGS ARE MADE.



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that it has dominated their culture, contributing substantially to their general welfare.

While the Pueblos had been weavers of cotton cloth previous to the coming of the Spaniards, it is considered by many authorities doubtful that the Navajos had ever grown cotton or woven it. In the Southwest, weaving did not reach a high plane of development until after the introduction of sheep by the invading Conquistadores when, through raids, the Navajos having possessed themselves of some sheep became shepherds, then weavers.

But Navajo legend has it that "Spider Woman" taught the Navajos how to weave on a loom which "Spider Man" told them how to make. And as an acknowledgment to "Spider Woman's" aid, for nearly two hundred years the Navajo weavers left a hole in the center of almost every blanket. However, when the early Indian traders began buying Navajo blankets for themselves, to use as bed covering, it was quite natural for them to reject every blanket having this hole, and consequently the Indians gradually ceased paying tribute to "Spider Woman." But when a weaver began to feel dizzy, or her eyes

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troubled her, she became distressed with fear of being overcome with "blanket sickness," and would then leave a small hole, half-hidden. And now that the motive for this once customary opening is better understood, a belated appreciation of its purpose has arisen, and a blanket containing a "spider hole" is more valuable than one without it.

The loom of today, a survival of aboriginal time, is a crude contrivance made by merely binding two crossbars to two poles driven in the ground and can be easily set up wherever a family goes. So well suited is it to the life of this semi-nomadic tribe that any endeavor whatever to modify it has never succeeded.

Sitting on a pile of sheepskins or blankets on the ground before her loom, with her moccasined feet tucked under her, the weaver works surprisingly fast as she places the weft threads through the suspended net of warp threads and, with a smooth, flat stick, battens down each thread. If the warp is of strong wool, tightly-spun, and the battening down is done in a thorough manner, a sturdy blanket is the result.

In the early days, when weaving was done to fill a domestic need, the output of the Navajo

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loom was little else but garments. But the dawn of the nineteenth century found the Navajos as makers of woven blankets for barter with the Spaniards as well as for their own use.

Up until the early years of the 1800's the Navajo blankets were woven in designs of simple horizontal stripes, but later these stripes developed into patterns more complicated, small checkerboard designs of rising and falling lines forming terraces running crosswise of the blanket. Such was the patterning at the zenith of Navajo weaving, when the wool of their sheep was at its best, when the colorants were delicate and lasting hues obtained from the vegetable kingdom of their homeland, and when their designs were uninfluenced by the encroachment of an alien civilization. Even today some of these blankets are without a central thread broken, and capable of holding water without leaking; nor have their colors been dimmed by the ravages of time. For a specimen of these unrivaled blankets, museums and private collectors pay as much as two thousand dollars, sometimes even more; so, doubtless, genuine examples of the most aesthetic weaving of North Ameri-

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can aborigines will be preserved for posterity.

One of the most sought is the "chief" blanket, the weaving of which required such precision of size and spacing of design as to be a supreme test of the weaver's eye. So skillfully is this blanket woven that when its corners are folded to the center the complete design is repeated rather than interrupted, and when again folded to the center the design of the whole is again repeated. While in a strict sense never a badge of chieftainship, as one might suppose, it bore a certain connotation of power whenever seen, and feared were the horsemen headed by a rider whose black and white striped blanket glimmered in the night!

Many of the "chief" blankets have not only broad stripes of black and white but also narrower stripes of indigo blue and red bayeta. And in referring to bayeta in connection with Navajo blankets, in most instances English red flannel is meant. This cloth was imported by the Spanish colonizers for trade and sale to the Navajos who raveled the brilliant threads of the smooth, tightly-spun wool fabric in order that they might retwist and reweave them into their own wool blankets.

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The justification of this tedious practice was the acquirement of a gorgeous hue—cochineal red—a color that first quickened the heart of the Navajo, when he glimpsed the bright hue of the red flannel breeches worn by Spanish soldiers as they marched across the deserts of the Southwest. Never before had the Navajos seen such a brilliant red! But for them to produce a color like it from their native plants has always been a problem, and is even to this day.

And to what extent the Navajos really pioneered in the development of the colorants used in their blankets is not so readily determined, for the prehistoric Pueblos, we learn, were dyers of cotton as the Basketmakers of still earlier days were dyers of yucca. In view of these facts it would be reasonable to assume that the Navajos were not unacquainted with a tradition of dyeing. And doubtless they observed examples of dyeing in the early practices of the Hopi Indians with whom they were in frequent contact.

Nevertheless the Navajos were pioneers in the use of wool in the Southwest, having become skilled in using it before the Pueblos had made much progress in the practice.

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And, according to the principal authorities on the chemistry of dyeing, wool, being an animal fiber, does not react to dyes and mordants in the same way as vegetable fibers do and, insofar as can be learned, cotton was the principal textile fabric of the prehistoric Pueblos.

Perhaps the brilliant finely-woven cloth, bayeta, not only stimulated the Navajos to such tight spinning and firm weaving of their own native wool as they otherwise never would have suspected possible, but, in addition, its rich and vivid colorings may have served as a spur to the further development of their vegetal dyes.

As a companion color for bayeta, the Navajo women were not content to use the natural black sheep wool with its somewhat rusty hue, but rather they would boil the leaves and twigs of the aromatic sumac for several hours, adding to the ingredients a concoction of native yellow ochre and piñon gum until they had a jet black of a glossiness that no commercial dye is known to surpass. And the white in these blankets was the clearest of the long silky Spanish merino wool.

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But today Navajo rugs have no such story to tell, for this painstaking practice was in pre-Bosque Redondo days, before Kit Carson and his hard-riding soldiers subdued this swift, elusive tribe and confined the majority of them to a military reservation in eastern New Mexico, where they were fed and clothed by the United States Government. Here, in this barren valley, forty miles square, the men were set to work digging ditches and breaking ground for planting. But tilling the soil did not please these Indians, formerly so free-roving, and ceaselessly they clamored to be allowed to go back.

With most of their flocks killed off, the women grieved because they had no wool to spin and, though the military reservation officers furnished them with brightly-dyed machine yarns, they had little heart for weaving. But here, quite likely, they experimented in more varied designs, extending their color combinations, some of the blankets, in all probability, now being souvenirs for their soldier captors.

After those four disheartening years of the 1860's, the woefully beaten Indans, some seven thousand in all, were sent back to their native

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hunting ground for, with the treaty of 1868, they were granted a lien on their old country as a reservation, thus bringing to a close the great Navajo drama of Bosque Redondo.

In the following year the Government bought and distributed to the tribe, thirty thousand sheep and two thousand goats, these being urgently needed for, according to the Navajo agent's estimate in 1868, the returning exiles had only 1,550 horses, 940 sheep and 1,025 goats.

Back home again, these Indians were a sadder but wiser folk. Now, in desperate need of garments, the women hastily erected looms in the silence of their far-off hogans, and again began weaving warm blankets to protect their shivering kinsfolk from the bleak winter weather. And at this time, as well as at intervals thereafter over a period of ten years, clothing was distributed to them by the Government.

Now that the Navajos were induced to live peaceably as wards of the United States Government, their country was open to alien penetration, and gone was the old freedom—to them—of their ancestral domain. With its quick and sudden ambushes, its stretches



HOUSES BUILT AT SHIPROCK BY THE GOVERNMENT FOR INDIANS EMPLOYED
IN GOVERNMENT WORK.

TWO "RETURNED STUDENTS" VISITING THEIR KINSFOLK
IN CANYON DEL MUERTO.



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of rocky desert, its unknown water supplies, its dangerous canyons, few outsiders had heretofore ventured very far into the land of the Navajo Indians.

But barely a decade passed since they had been under reservation control before the transcontinental railroad traversed the country not many miles distant from the reservation boundary. And with the coming of the Iron Horse, puffing its way along the far-reaching slope of the Continental Divide, arrived intrepid frontiersmen, among them shrewd traders bent upon commercializing native weaving, as the loom was becoming more and more deprived of its function as an arbiter of Navajo dress, the tribe gradually abandoning the use of their own textile as clothing in favor of American machine-made cloth. To such an extent did cheap cotton fabric change the long-established, hand-woven style that by 1895 the tribe in some of the less remote areas was reported by traders as "going calico" very rapidly, and many native dresses were pawned.

Heretofore the blankets had been woven as garments for members of the tribe, and tribal standards of workmanship were embedded in

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every thread and stitch. But as time went on, the Navajo blanket was more and more sought as a covering for the floor of the distant home of the white man, from whom there was an ever-increasing demand for the output of the Navajo loom. Thus was the native craft of blanketry transformed into a rug-making industry.

After Bosque Redondo days, stripes and terraces did not hold unrivaled sway in their designs, for then the diamond found its serrated way into the looms of these weavers, but the relation of this design to the one preceding is readily discerned, as it is merely a constricting of terraces.

But with the resident trader at hand, design gradually changed from the tranquility of simple patterning to a style bold and dominating, fashioned with a view to catching the eye and unloosening the purse strings of the passing tourist. Little bayeta was woven now, for as a quick substitute the women took their sheep pelts to the trading post and received in return stable-dyed, machine-made yarn, ready spun—and in such showy color!

And to speed up production, some traders furnished the weavers with cotton twine for

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warp. The spinning of wool into thread for warp was a long and tedious process. Even the long, coarse hair which had been sorted out and put aside to use for the warp was spun over and over, often as many as five times, to make the strands unusually tough and hard, for the older women of the tribe—the skilled weavers—always insisted that the part of the rug that does not show should be the stronger.

It is interesting to note that aniline dyes reached the Navajo country about the same time as did cotton warp and Germantown (Pennsylvania) yarns, around 1880. But the traders particularly interested in weaving as an Indian art fought the innovation of aniline dyes as a substitute for the native vegetal dyes, almost invariably of a pastel hue, readily fitting into color schemes, plants being rarely known to yield violent shades.

Yet it is needless to say that the squaws, though awe-stricken, were all agog at the magic of the white man's wonder-working powder, which required only to be released from its tiny envelope and dissolved in a cauldron of boiling water to produce a flood of brilliant color—a pot brimful of it!—for the price of a goat hide.

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Heretofore, after wearily tramping miles and miles over their roadless country—gathering roots, barks, leaves and flowers, and in addition, native alum to use as a mordant—the Navajo woman with her cumbersome load trekked back to her hogan. There, for days and days, she would busy herself in powdering the barks between two stones, boiling roots, leaves and flowers, or preparing the herbs in other ways so as to produce the rare vegetal dyes with their soft, rich tones.

Nor did she now need to store, in an earthen pot outside the hogan, urine with which to set the color of the old Spanish indigo; mordant and color were combined in the white man's little packet of powder, ready at once to dye plenty of wool into white man's colors to be woven into white mans' designs. Little wonder if she thought, "The ways of the white man are best after all!"

In a furore the Navajo women set out to weave bigger and brighter rugs. Into their looms, now enlarged, they battened the wool in double-quick time, without proper cleaning, spinning and dyeing. But, although the thoroughness that characterized the weaving of the small designs of earlier days was lack-

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ing, the large fantastic patterns in the vivid hues, so easily prepared from the packet dyes, allured the eye of many an artless, hurrying tourist—and sold many a Navajo rug!

But before long conservative traders and dealers perceived the underlying dangers jeopardizing Navajo weaving as an art, and set out to eliminate them, as the sale of rugs steadily declined. Fortunately Navajo weaving had improved by the year 1910, for by that time most traders and wholesale dealers had already decided that for the sake of this art there could be no more cotton warp, no more unclean wool, and no more careless workmanship and—any shrieking shade of aniline must be eliminated!

So today in your travels, should you chance to see a large fuzzy rug, loosely woven, with bold patterns of zigzag lines, checkerboards or diamonds done in at least a half dozen colors—not omitting purple—you may be quite sure it was woven in that dynamic period of 1890-1900, the time when aniline dyes were unique and commercial demand for the Navajo rug was brisk. But these packet dyes, of course a novelty at first, were nevertheless a source of strong abundant color—a great

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time and labor saver—and for a round half-century have played a dominant role in Navajo weaving.

Today, the standard of the United Indian Traders Association requires that, "Material used shall be virgin wool or virgin Angora wool, the same shall be hand-washed, hand-carded and hand-dyed, the warp shall be all wool and hand-spun, the woof shall be all wool and hand-spun, and the blanket shall be hand-woven by an Indian." In this ruling, however, no mention is made as to color and design and the kind of dye; nor is mention made as to the crude aboriginal loom which so persistently struggles on, against the quantity-producing, power-driven loom of the white man.

It is doubtful whether any Navajo weaver ever undertook to draw a picture or tell a story upon her loom until after the American conquest. Then she sometimes launched forth with designs of the American flag, eagles with wide-spread wings, square-wheeled railway cars, and other designs, some so strange and chaotic as seemingly to be without rime or reason, but remembered possibly from some visit to the trading post, or while

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hiding in the mountains from the soldiers, long ago.

The traders occasionally supplied catalogues of linoleum patterns as a source of inspiration, but sometimes the weavers derived ideas for designs from food wrappers, oil-cloth, or from advertisements of various kinds. One weaver, for a long time, worked on what was purported to be, "A very beautiful rug." The trader awaited the completion of the rug with great anticipation, only to find upon unrolling it an imitation of the design on an Arbuckle coffee wrapper!

But in most instances when weaving a rug, the Navajo woman does not have a pattern carefully worked out on paper or even roughly sketched upon the sand. She may have the whole arrangement in her mind before beginning to weave, but perhaps just as often as not it develops as she works. And the greater the degree of excellence the rug attains, the more mindful the weaver is to interrupt the design somewhere, if only to make a discoloration in the thread—to avoid a bane of perfection, the curse that might be imposed for seeming to excel the handiwork of the gods.

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There are no round corners, circles or arches in Navajo weaving; all corners are pointed at angles of various degrees. Figures in the form of triangles represent clouds or rain far-off; parallel lines, falling rain; zig-zag lines, lightning; and squares, flat-topped mountains or mesas. The Navajo blanket never has been used ceremonially, but to such an extent are its designs associated with water, storm and clouds that should anyone be urged for his opinion as to the purport of a figure, the more prudent person would answer—a suggestion of rain.

The typical Navajo rug of today displays a central design enclosed in a border of isolated figures—a new feature in the arrangement of units of design. Charles Avery Amsden, in his authoritative book, **Navajo Weaving*, points out that: “Traditional Navajo design, whatever the style, was continuous. Its rhythm was one of regular flow rather than of repetition and balance. Isolated figures were not prominently used.” But the design of the border now claims the weaver’s fancy in a way that probably nothing else since the days of stripes and terraces has been known to outrank.

* *The Fine Press*, Santa Ana, Calif.



A GROUP OF COMMUNITY BUILDINGS AT LEUPP ON THE
LITTLE COLORADO RIVER.

ADMINISTRATION BUILDING AT NEE ALNEENG, THE "WASHINGTON, D. C."
OF THE NAVAJO COUNTRY.



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Still throughout the reservation a revival is in progress of the handsome old stripes as well as the gorgeous old vegetal colors and the traditional methods of technic, in response to the growing appreciation of a discriminating public, now having a better understanding of the early product of the Navajo loom, is encouraging the Navajo weaver to be herself again.

Nevertheless varying conjectures have arisen as to the prospects for the "revival rug" and some uninformed individuals view with suspicion its colors of delicate hue. But the more deliberate observers see in this re-inspired style great promise for the future of Navajo weaving, for with its pleasing patterns in soft vegetal dyes this rug is winning a multitude of admirers among those whose aesthetic feelings had been offended by the glaring colors and vapid designs of the type of rug formerly so prevalent.

There are regional styles, too, some localities having become known recently for producing rugs of a distinctive type. The launching of one of these regional styles, "Two Grey Hills," named of course from the terrain where this sturdy rug with its border of

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elaborate design is woven, has done much to popularize gray in Navajo weaving. One type of this regional rug contains no dye colors whatever, being made in the natural colors, white, black and gray.

More and more the desirability of the natural colors, gray, brown, black and white, is recognized, and vegetal dyes in shades of brown, tan and walnut are gaining favor. Many of the rugs now show red merely as a brightener. Nevertheless, there is still a demand for the vivid hues commonly called "Indian."

So in the output of the Navajo loom of to-day may be found rugs of various styles, many brilliant enough for the den or serene enough for the sun parlor, others subdued enough for the living-room or somber enough for the studio, and while some are striking enough to harmonize with an ultra-modern setting, still there are others tranquil enough to grace a room of the old-fashioned kind. And usable not only as a rug but as a couch covering or a wall hanging, this serviceable product is a popular furnishing for the summer camp, too.

And in passing, something should be said for the small squarish blanket with tasseled

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corners, about the size of the average bathroom rug. A blanket of this kind is used to protect the horse's back from chafing under the saddle. The Navajos early adopted from the Mexican settler the high-cantled hornless saddle, made of wood covered with leather and set with many brass nails, and it was still in common use up to about a half-century ago.

Twilled weaves have long been preferred for saddle cloths as such weaves result in a thicker and softer fabric than a plain weave. Today the double saddle blanket is the more prevalent, though the single type is believed to have been the earlier style.

But the use of these hand-woven saddle blankets, upholding to the greatest degree the old tradition of firm weaving and dignity of color and design, has not been confined merely to the equestrian Navajo, for over much of the West, especially through the latter days of the cowboy's renown, these blankets were in common use, many of them being bought even on the Mexican border to sell to the vaqueros of that region. And to this day, these blankets are still widely used, not only by Indians but by many a Westerner who chooses a substantial saddle cloth made by the Navajo

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rather than the scientifically fashioned pad-like fabrication favored in elite circles where, nowadays, horseback riding is designated, by some writers, as "equitation."

Owing to the long, dull period of winter affording more leisure time for weaving, most rugs are brought to the trading post for barter in the early spring. But, when lambing, shearing and harvesting seasons come, weaving slackens, almost halts, and during the summer it is further delayed while the new wool-clip is carded and spun. And long ago traders had already discerned that a dull wool market encourages weaving, because wool in the form of rugs brings somewhat more money than wool in the raw. But with the wool market active and prices high, rug production declines, for Navajo wool goes wherever the demand is greater and the remuneration higher—to the loom or to the raw wool market.

And at this point, no recorder of fact would dare miss noting, in regard to the economics of Navajo weaving, an experiment conducted at a trading post a few years ago revealing that the typical Navajo weaver wove rugs for mar-

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keting for the pitifully low wage of—five cents an hour!

But let us glance backward for a moment, to 1890, when we get our first figures of the cash value of Navajo weaving. Reports for that year show the total output to be valued at \$40,000, of which \$25,000 is the estimate of sales and \$15,000 the valuation of the output retained for tribal use. And we find that since the report of 1890, the estimate of annual sales increased about forty-fold in forty-one years, for the valuation of sales for 1931 is estimated as reaching the million dollar mark.

But within the last few years a decline in the amount of weaving has been reported. Formerly, when a family was in need of supplies from the trading post, the brave complacently waited for his squaw to complete a rug. But of late, since the Navajo men have been receiving wages, the squaw—with her man on a payroll—is more apt to wait for him to bring home provisions.

Still, in a way, the employment of men on the various Government work projects tends to improve the quality of the weavers' output, for in boom times only the more skilful weav-

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ers remain at the loom. But, whether skilled or not, when times are lean, all need to weave.

Many of the Navajo rugs are marketed in Gallup, New Mexico. It is here for three days and three nights during the last week of August each year that the Inter-tribal Indian Ceremonial is held, attracting more than seven thousand members from twenty-five or more tribes, who assemble in a great natural, open-air amphitheatre at the edge of the town, surrounded by colorful mesas. Then, the Indians dance and chant, engage in tribal games and sports as well as compete in their arts and crafts. This annual ceremonial has done much to influence Indian craftsmen to improve their skill.

On one of these occasions some years ago, the first prize in weaving was awarded to the contestant who had woven a rug in imitation of an Oriental pattern. But recently, on a similar occasion, the first prize was awarded to the weaver whose rug retained to the greatest degree the distinctive beauty of its old-time tradition—the colors, the designs and the technics evolved before the dawn of the trading post, when the Navajos had already become a nation of artists-in-wool.

CHAPTER VIII

EFFECTS OF ALIEN INFLUENCE

The degree to which the Navajos have adopted the white man's ways varies, owing principally to the geographical factors affecting the diffusion of alien influence. Physical obstacles have almost completely isolated some members of this scattered tribe from the centers of contact with the whites. Close to the railway towns, Navajos, arrayed in the habiliments of the white man, are attending moving pictures, driving automobiles, or in other ways indulging in conveniences, perhaps even luxuries, of modern American life. Far out on the reservation may be seen "blanket" Indians, traveling mainly by covered wagon, the men long-haired and stalwart, the women demure and colorful—some of them having never seen a railroad.

The northwest part of the reservation is the wildest, and may be reached from Tuba, an oasis walled in on the west by sand piled against a windbreak of tall trees; or by way

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of Kayenta, a settlement almost 200 miles from the railroad, sometimes publicized for having a post office—the remotest post office in the United States.

In this vast, out-of-the-way wilderness, rocks, sculptured into fantastic forms by the chisel of erosion, challenge the imagination of the Navajos until, to them, these stones seem to speak as with the tongues of men. In such surroundings legends readily take form. But even a map of this part of the reservation makes good reading, especially for the stay-at-home adventurer who may ponder over names thereon, giving wing to the imagination, such as Skeleton Mesa, Forbidding Canyon, Mitten Butte, No Man's Mesa, Organ Rock, Rainbow Natural Bridge.

So rocky and waterless for the greater part is the northwestern area that it is devoid of human occupancy, except in occasional spots. One of these is Betatakin, an oasis at far-off Shonto Springs. Here even dwellings constructed for the Indians employed on Government projects are built in the form of hogans, as it would be difficult to prevail upon the Navajo of this remote region to occupy a



NAVAJO TRIBAL COUNCIL HOUSE BESIDE A WIND-SWEPT ROCK AT NEE
ALNEENG. HERE THE NAVAJO HEADMEN AND OTHER TRIBESMEN RECENTLY
MET TO DEBATE THE NEED FOR A NAVAJO CONSTITUTION.

AT THE SITE OF NEE ALNEENG: A NATURALLY-FORMED "WINDOW" IN A
PINK-HUED SANDSTONE CLIFF, FITTINGLY DESIGNATED, WINDOW ROCK.



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modern cottage such as is built at Shiprock for Navajos employed there by the Government.

Living in the tributary canyons of the Colorado and San Juan rivers flanking this wild northwest area are other Navajos too, whose culture has been but slightly touched by outside influence, for in these intricate gorges they rarely see a white man. And it is believed that the heads of some of these side canyons and the tops of the intervening mesas are still unexplored.

It is close to the railroad towns and along the principal highways, especially near the Government headquarters, the trading posts and the missions, that the Indian has already been affected in various ways by the white man's ideas and wares. With the further development of water features and transportation routes, accompanied by an increasing prevalence of the automobile, it is obvious that the diffusion of white influence will steadily increase. Hence the educational and social workers in the Navajo country are making definite effort to offset any objectionable features in alien contact by encouraging and strengthening those elements in Navajo life

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known to be valuable for the Navajo and for society as a whole.

Moreover, it is the desire not only to re-awaken pride in being Indian, but hope for the future of the Indian, with the rich and many-sided values of Indian life as expressed in the arts and crafts, the songs and dances, in the co-operative institutions, and other forms that have come down to the Navajo out of the past, developing patiently through generations of a people immersed in the life of nature—the sun, the sky and the clouds, the mountains, the deserts and streams, and growing things, furnishing them with inspiration for worship.

Each culture has its own cadence and step—its own expression. So Navajo ways of doing things are to be assumed as being right, except as they are found—by the experience of members of their tribe or others altruistically interested in their welfare—detrimental to the Navajos or destructive to the rights of others. But while protecting the Indian culture from violent uprooting, the new policy aims also to give to the Indians the advantages of modern education and to bring scientific apparatus within their reach, thus fitting them to assume

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a normal part in American life—bringing them into the stream of American culture as a whole.

Owing to the isolation and scattered distribution of the Navajos, this tribe was last of the Indian groups to be reached with school facilities. It was long assumed that attendance of Navajo children at day schools was impossible in the Navajo country except in a few places, and this was one reason that in the past the boarding school persisted there as the chief form of education.

During the year ending June, 1933, not over 5,000 of the 13,000 children of school age were in school. Study of population movements has shown, however, that a plan involving many small central schools, with bus and horseback transportation, would make day-school possible for the vast majority of the Navajo children. Fortunately it was possible to obtain an allocation of Government funds for construction of roads and of day schools to accommodate some 3,000 or more additional Navajo children. The educational program now seeks to bring the Indian children into a closer relation to their homes, by increasing the number of day schools and reduc-

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ing the number of boarding schools, for the reason that family life is considered an important factor in Indian education. Furthermore, these day schools are being developed so as to work with adults as well as with children, and become real centers of community life, touching all phases of Navajo existence.

In order that the new educational policy may be accommodated to the aptitudes and mode of life in the tribe, the Indian Service is now receiving the active help of the Bureau of American Ethnology, and of scholars trained in the understanding of native culture, and sensitive not only to native mode of thought but to native environment and the economic situation of the tribe.

But any program for the Navajos, at the present time, must begin with their economic need. No other approach could be justified in view of the opinion of competent authorities that, "unless the soil erosion problem is solved for the Navajos their land will not support them more than a few years longer." So in the face of a swiftly disappearing life and land, among the first undertakings in the community centers will be to start the Navajos in becoming soil erosion conscious. They must

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learn the facts of range management and of better grazing.

Of the 47 new day schools planned, the greater number are now ready for use. In most instances the buildings are surrounded by space for gardens, trees, and agricultural work. Each of the larger centers is equipped with a health clinic, where Navajo girls are to be trained to assist the field nurses in carrying on the fight against tuberculosis and trachoma into the remoter districts. Home economics rooms, dining-halls, workshops, bathhouses and laundries are among the various features included. Gradually becoming focal points of neighborhood activity and organization, these schools will train the young Navajos in better methods of play and work in the Indian environment, as well as bring to these children and to their parents the skills necessary to gain a fuller life through a more effective development and use of Indian resources by the Indians.

The new day schools are bi-lingual, that is English and Navajo. A few of the older Navajos, the "Longhairs," are sometimes on the school program to teach their tribal traditions. Soil erosion control, taught mainly

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through the Navajo language, has penetrated deeply into the curricula and project activities.

The new system opens the door to qualified Indians who are equipped, through character and experience, to take a dignified and responsible part in the guidance of their own people. Already there have been selected intelligent young Navajo men and women as assistants in teaching, and as housekeepers and health aides. What has already been accomplished is but a step toward the desired goal, for as soon as a sufficient number of now untrained, but eager, Navajo workers become qualified, the greater part of the personnel of the community day school center will be selected from the tribe.

Moreover, aiming to interest every member of the tribe in the community's welfare, a recently drafted Navajo Constitution would give all Navajos a direct voice in tribal affairs, instead of leaving these matters entirely to the Tribal Council of seventy headmen.

In collaboration with anthropologists, a plan is now under way whereby a number of competent Navajo young people will learn to record the Navajo language. It is hoped,

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too, that the non-Navajo workers in the Navajo area will endeavor to learn some of the Navajo language, not in expectation that many of them will become proficient in it, but with the idea of their better understanding the cultural background of these Indians.

A school program that provides learning experiences as related directly to the children's environmental setting is gradually taking form. These activities are based on the individual needs of the pupil and capitalize the opportunities for preservation of racial culture. Some Navajo children give poetic expression to their love for the mesa, the pinto pony, and to their thoughts about the ever-changing clouds drifting across the sky. The children illustrate their favorite reading material by modeling the figures in clay and molding the story in sand; for example, in one school there on the sand-table browsed—"The Three Billy Goats Gruff!"

Through this new policy in education, a cultural revival in the Indian arts and crafts has already begun. Navajos are painting murals in some of their community houses. They are studying the fine specimens of old silverwork and weaving, and devising new de-

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signs and textures, too, in their workshops. They are giving increased attention to the rare tones produced by the native vegetal dyes. Young people are flocking in greater numbers to the ceremonial dances and the returned students are entering more enthusiastically into the service of their own people.

And the missions, too, enlarge the sphere of influence exercised by the whites. The organization of centers where facilities for sewing, cooking and bathing are combined with clinics and religious instruction is the most recent development in mission activities. At Ganada, Arizona, fifty-six miles northwest of Gallup, New Mexico, is the largest Indian Mission in the United States. It includes an 80-bed hospital, an accredited nurses' training school and a high school. An extensive field nursing program also is carried on by this institution.

A complete aerial survey of the reservation has been made by the United States Soil Conservation Service. Some two hundred square miles of territory are being managed as demonstration areas. As those lands are believed to be more or less typical Navajo country, what is learned there can be applied else-

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where on the reservation. Through range control and proper husbandry methods, much has been accomplished during the past three years in checking erosion, in reducing the disastrous wastage of soil, and in rebuilding the country's vegetative cover and fertility—making the reservation a better place in which to dwell and from which to wrest a living, by identifying human happiness with the wise use of the natural resources of the Navajo domain.

With the view to making possible the permanent support of several hundred Navajo families through small scale farming rather than by stock raising, various irrigation projects have been authorized, some of which are already underway. However, inasmuch as the greater part of the Navajo country is naturally a sheep range, it would seem reasonable to assume that not only for the next generation, but perhaps for many generations to come, agriculture will play a subordinate part in the life of the Navajo people. And a prospector may be tempted to pause, to ponder how far oil will go in making amends for the shortcomings of this region, for the tribe is already receiving royalties on this underground

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wealth produced and marketed on their land in New Mexico.

In journeying through the Southwest today, should the traveler leave the main highway at Gallup and drive twenty-six miles to the northwest, he will find located at spectacular Window Rock a new development—the centralization of all Navajo activities—consisting of an administration building, Indian council house and other community structures as well as quarters for employees, built entirely of native stone, more than 90 per cent. of the labor on the project having been done by Navajo Indians. The walls of this unique development rise in a form suitable to this Southwest area. But with an accent strange to most Americans falls its name, Nee Alneeng—the “capital” of an Indian country, the land of the still unassimilated and ever-increasing Navajos.

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